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Original Articles

CARCINOMA OF THE BREAST.

TEN YEARS' EXPERIENCE WITH MY METHOD OF RADICAL OPERATION.*

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NEW YORK.

On November 12th, 1894, I read a paper[1] before the section on surgery of the New York Academy of Medicine, entitled: "An Improved Method of Radical Operation for Carcinoma of the Breast." This paper—announced to the chairman of the section Oct. 10, 1894—gave a report of but one case operated on by the new procedure, (on Sept. 19, 1894), while the operation itself was briefly but fully described. The chief points were that the cancerous breast together with the underlying pectorales muscles as well as axillary glands and surrounding fat, were removed *in one mass,* and that the blood vessels were primarily ligated at their origin. The incision I used at that time began about one inch below the insertion of the pectoralis major muscle onto the humerus, traversed the axilla, surrounded the breast at its base and ended over the sternum, somewhat beyond the middle line of the body. In order fully to expose the structures below the clavicle, the upper skin flap was divided by an incision upward, perpendicular on the first, striking the clavicle at about its middle (Fig. 2). In cases of need this latter incision was carried into the supraclavicular space for the removal of glands in that region.

In the course of the last six years I have changed the direction of the external part of the incision and have also abandoned the additional cut up to the middle of the clavicle.

The principles of this method I have employed in all operations for cancer of the breast that have since come under my care, making such changes in the technic, from time to time, as larger experience seemed to render indicated.

Since the publication of that first article of mine—which, by a strange coincidence, was read simultaneously with the appearance of Halsted's paper on this subject,[2] though conceived entirely independently, I have published no further reports, intending that ample time should elapse to permit of careful observation as to the lasting merits of the operation.[3] On several occasions I have, however, presented patients thus operated on, before the N. Y. Surgical Society, and have, furthermore, given a brief résumé of the operation as carried out by me within the last six or seven years, at the session of the American Medical Association, Atlantic City, 1904, where I had originally planned to read this paper.[4]

I will not here dwell on the details of the changes in the technic that I saw fit to introduce in the course of my experience with the method, but will simply describe the operation as I carry it out to-day.

PREPARATION OF THE PATIENT.

On the day preceding the operation the entire anterior portion of the thorax, the axilla, arm and back of the respective side to the spinal column, as well as the anterior aspect of both thighs are shaven. The latter is done for the sake of having sufficient material for grafting. On the operating table, the patient having been anesthetized, this entire area is once more thoroughly prepared in accordance with aseptic principles. Two long, rectangular horse-hair pillows, covered with rubber-cloth, and wrapped in sterile towels, are placed lengthwise along either side of the spine. In this way the body of the patient is slightly raised from the operating table and hence access to the deeper parts of the axillary cavity is greatly facilitated. (Fig. 1.) The hand and forearm of the respective side, including the elbow joint, are wrapped in sterilized towels and held in place by an aseptic roller bandage. The patient's head is covered with a wet towel, fastened by a bandage around the forehead and occiput or with a rubber cap. A nurse, prepared as to assist at operation, holds the patient's arm (flexed at the elbow to an angle of 90 degrees) slightly raised above a line that would form a right angle with the longitudinal axis of the body. She stands next to the anesthetist, facing the operating field, holding the patient's hand with one hand and supporting the elbow with the other. The patient's arm is put through the cut in the sterile sheet that covers the entire body of the patient.

TECHNIC OF OPERATION.

First Step.—Skin incision, two flaps are formed, a lower and an upper one.

(a) Formation of lower flap: The incision starts at the point of insertion of the pectoralis major muscle on the humerus, passes downward and inward, parallel to and about one and one-half inch

* Read before the New York State Medical Association, 1904, and before the Section on Surgery of the New York Academy of Medicine, 1904.

1. New York Medical Record, Dec. 15, 1894.
2. Annals of Surgery, 1894, vol. xx, p. 497.
3. An operation for cancer of the breast, closely resembling mine was described by Z. Rotter of Berlin in the *Berlin klin. Wochen.*, 1896, Nos. 4 and 5, more than a year after the publication of my first article. In 1899 O. Witzel of Bonn emphasized the advantage of the preliminary ligation of the axillary vessels near the trunk, when operating for cancer of the breast. (*Deutsche med. Wochenschr. Vereinsbeilage,* 1899. No. 33.)
4. THE JOURNAL A. M. A., Aug. 16, 1904.

above the border of the pectoralis major muscle until the base of the breast is reached, then continues along the lower edge of the latter and ends somewhat beyond the middle line of the body, over the sternum[5] (Fig. 3). With a few cuts the lower flap is loosened and turned downward—as much subcutaneous fat as possible being left attached to the breast—until the border of the latissimus dorsi muscle is exposed in the axillary cavity and, further inward, the chest wall (Fig. 4). The border of the latissimus dorsi is first followed downward to the bundles of the serratus anticus major and then up to the mass of fat that enters the bicipital sulcus of the arms. The fat is bluntly pushed off the anterior border of the muscle with the handle of the knife, and a loose compress of dry aseptic gauze is temporarily packed into the basis of this whole wound.

the breast as can be done without endangering the nutrition of the skin; special care is taken not to include the pectoral fascia. By means of sharp retractors, the breast and muscle are then pulled downward by one of the assistants, while the other holds up the upper flap, which is then prepared off by the operator until the cephalic vein is reached and the lower border of the clavicle with the sterno-clavicular articulation exposed. The tissues covering the latter are left undisturbed (Fig. 4).

Second Step.—This consists of exposure of the axillary and subclavian veins after dividing the tendon of the overlying pectorales muscles.

(a) The lower border of the cephalic vein which runs within the groove between the pectoralis major and deltoid muscles, is followed up to the insertion of the

Fig. 1.—Patient on table ready for operation. The sterile sheet is pulled down in order to show pillow raising the patient's back.

(b) Formation of upper flap: The inner and outer parts of the first incision are united by an incision carried along the upper border of the breast, the angles necessarily formed being rounded out as far as this is feasible (Fig. 3). Again, as much fat is left attached to tendon of the pectoralis major onto the humerus; the tendon is quickly exposed in its upper as well as in its lower aspect, in the latter place by clearing the lower border of the muscle, near the tendon, so that the axillary fat is fully detached. This having been done, the arm is lowered somewhat by the nurse, in order to relax the pectoralis major. Now, the surgeon, encircling the tendon from below with his forefinger (Fig. 5), cuts it off close to the humerus. By means of sharp retractors the muscle is pulled inward and downward, being loosened at the same time with the knife from the cephalic vein, until the clavicle is reached, when it is cut off close to and alongside the lower border of this bone and of the sternoclavicular articulation. (The vessels crossing the operating field are doubly clamped and divided, and the nerves, entering the belly of the pec-

5. The illustrations accompanying this article and showing the various steps of the operation represent drawings from photographs of dissections on the cadaver. As I needed colored illustrations also in connection with the reading of my paper, I did the work twice, first, at the dissecting room of the College of Physicians and Surgeons, through the courtesy of Dr. George Huntington, and then at Cornell University, through the kindness of Dr. John Rogers, Jr. I would here express my sincere thanks to them, and also to Dr. Martin Rehling, former house surgeon of the German Hospital of New York, who, in both instances, assisted me in preparing the various steps of the operation. I am, further, greatly indebted to Dr. Henry Macdonald of Morris Park, L. I., the artist who made the drawings in this perfect manner, from the photographs taken by him.

toral muscle cut.) The thorax and the intercostal muscles together with the upper part of the pectoralis minor, now come into view.

This step of the operation is greatly facilitated if the surgeon assists in the downward traction exerted by the sharp retractor held by one of the assistants pressing his left index and middle fingers on the bundles of the belly of the muscle. The tendon of the pectoralis minor is bluntly freed from the surrounding tissues and divided from the coracoid process, the left forefinger again encircling it (Fig. 6). Care has to be taken not to injure the subclavian vein which runs just beneath the tendon.

(b) Transverse division of the fascia overlying the axillary vessels: The axillary and subclavian veins are brought into view and their lower border is bluntly exposed.

Third Step.—This consists of extirpation of the axillary and subclavian glands with surrounding fat.

(a) The gauze tampon that was placed inside of and underneath the lower flap, is removed.

(b) The axillary fat covering the upper portion of the latissimus dorsi muscle is split up to the axillary vein, thus dividing it from the mass of fat that enters the sulcus bicipitalis brachii; it is pulled downward by sharp retractors.

There is no danger here of injuring the axillary vein, since this has already been fully freed, and the left forefinger is pushed underneath the fat up to the vein, its nail resting on the same (Fig. 7).

(c) Beginning at this place, the lower border of the axillary and subclavian veins is carefully followed up to the spot where the latter disappears underneath the clavicle. Every vessel, that is come across, is doubly caught and divided between the clamps. In this way little or no blood is lost (Fig. 8). The two superior subscapular nerves are always carefully preserved, but not the third, the one for the latissimus dorsi muscle. It is usually deliberately divided on its way across the axillary cavity close to the main vessels, and again with the bundle of artery and vein at the point of entrance right at the exposed border of the muscle. I do so, because I fear that in attempting to preserve the nerve in its entire course, infected tissues might be left behind. I have never seen any harm resulting from thus sacrificing the nerve with reference to the future use of the arm.

Fourth Step.—This is the formation of a pedicle over the sternum, and the removal of the mass.

(a) The first assistant takes hold with both hands of the tissues so far loosened, without, however, exerting the slightest traction, merely supporting them. If he does pull, he is liable to tear off patches of the periosteum or perichondrium of the rib or their cartilages at places where the latter are firmly attached to the origin of the muscular fibers, and if such bared spots can not be immediately covered by living tissues or grafts, a slowly developing necrosis may be the consequence.

Returning to the exposed subclavicular space, the surgeon, in turning the blade of the knife horizontally, that is to say, perpendicularly toward the thorax, now cuts rapidly down to the chest wall, taking care not to injure the bundles of the serratus anticus major muscle. If he should not thus turn the blade of his knife, but cut perpendicularly downward toward the subscapular muscle, he would enter the fat covering and enveloping the blood vessels and nerves of this region, thus running the risk of unnecessarily causing considerable hemorrhage and of injuring the subscapular nerves. In the general run of cases, this region need not be explored. Only in very far-advanced cases did I find a few infected glands in this area.

(b) With the operator's left hand on the fibers of the pectoralis major muscle to be cut close to the chest wall, pressing from below the mass gently toward the sternum, thus supporting the weight carried by the first assistant, short quick incisions, parallel to and almost on a level with the ribs, cut the fibers of the pectoralis major near their origin. The perforantes arteries and veins, being under tension and, hence, generally easily discernible, are also doubly clamped and divided. If not well discernible they may be cut first and then at once secured with clamps. If proper care is exercised, very little blood is lost. Now the only tissue by which the extirpated growth still remains attached is the pedicle, formed by the muscular fibers at the sternum. The whole mass is then well raised by the first assistant, and the operator, grasping this pedicle with the left hand, divides it close to the sternum, with a few rapid cuts with a pair of large curved scissors or with the knife (Fig. 9). The severed arteries are caught with clamps after each clip with the scissors. The operation, as such, is completed.

The average time consumed in this operation, which I have called "the radical operation for carcinoma of the breast," is from 25 to 30 minutes. I have done it in 12 and 16 minutes and, on the other hand, have used from 50 to 60 minutes and even more in cases in which the glands closely surrounded the axillary and subclavian vein, and supraclavicular infiltration necessitated my cleaning out this space. For the purpose of facilitating the subsequent grafting of the resulting defect, I have—as an experiment—for the last nine months, in patients *who came to operation early*, tried to preserve a small stump of the belly of the pectoralis minor muscle (Fig. 10), which, it is the concensus of opinion among pathologists, is never infected by carcinoma, except in far advanced cases in which the diseased tissue has grown through the muscles toward the ribs and a cure by operative means is out of the question.

Fifth Step.—This consists of ligation, drainage, and suture of wound.

(a) Ligation: I have always made it a point not to lose time by applying ligatures during the operation. The principal blood vessels being cut close to the main vessels, except in the beginning and toward the end of the operation, no appreciable amount of blood is lost. As stated before, all visible arteries and veins, even the smallest ones, are brought to view during the principal part of the operation by blunt preparation with the handle of the knife, forceps, curved scissors or grooved director, then caught by two clamps and divided. Other vessels that have to be cut during the early part of the operation, before having been clamped, are immediately secured. Six dozen artery clamps should be on hand. I have always been able to get along with this number, and have sometimes used less. If this number can not be procured, the surgeon may have to apply ligatures in the course of the cutting part of the operation. If, toward the end of the operation, the supply of artery forceps becomes exhausted, those applied to the smaller vessels in the beginning of the work may now be safely removed without giving rise to further hemorrhage, since the trunk has meanwhile been clamped. After

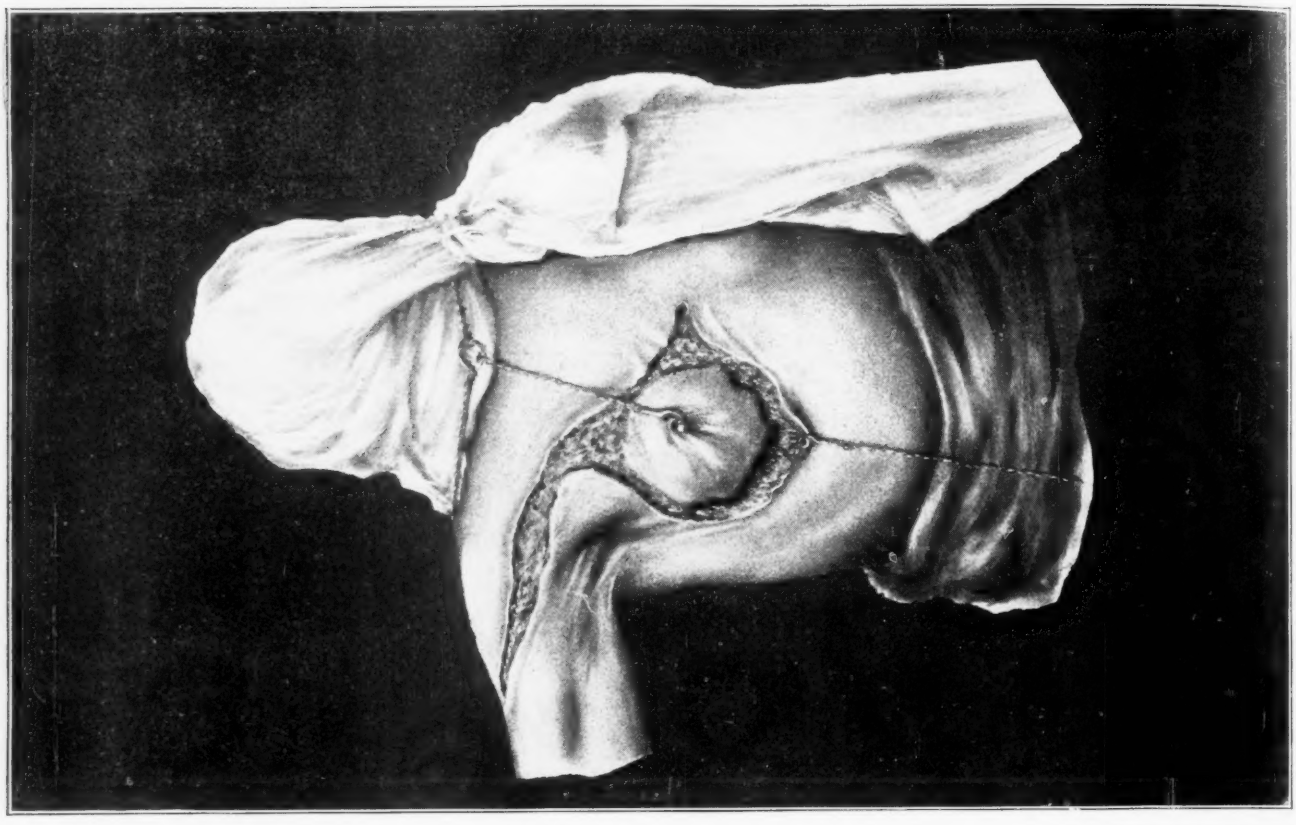

Fig. 3.—Skin incision as practiced since 1898.

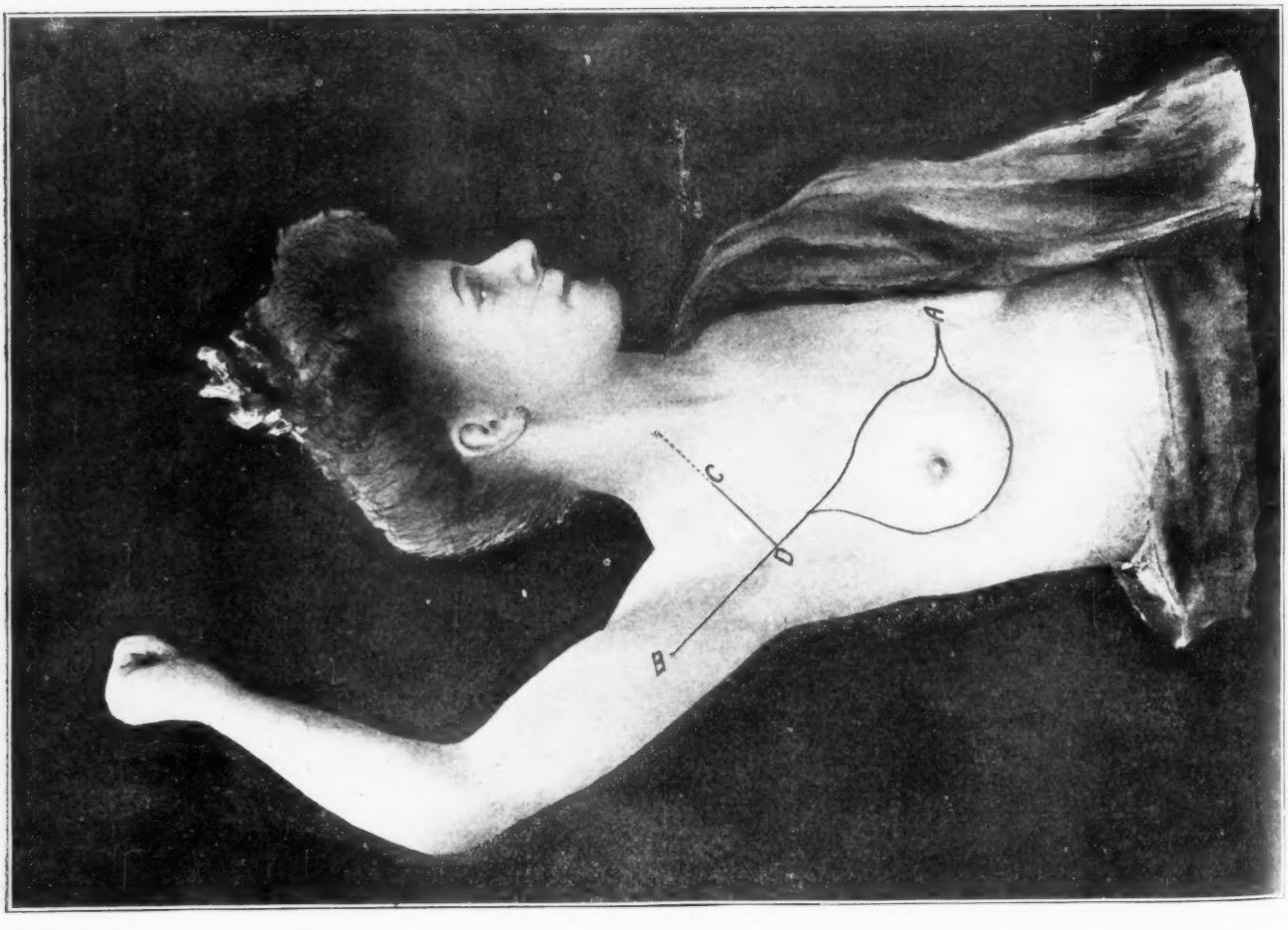

Fig. 2.—Original incision as devised in 1894. The dotted line shows continuation into the supraclavicular space for the removal of infiltrated glands.

the pedicle has been divided and its vessels are caught, usually from 30 to 50 clamps will be found hanging on the surface of the wound. After all vessels are secured, whatever further small bleeding points there may be, are caught and ligated until the wound, after frequent mopping, appears to be perfectly dry. Irrigation is never used, the operation is carried out in the dry, aseptic way, from beginning to end.

(b) Drainage: I invariably drain the axillary cavity and have always found it to facilitate convalescence. The surgeon places the second and third finger of his left hand within the wound at the border of the latissimus dorsi muscle and at the lowest point of the flap respectively, and makes an incision parallel with the border of the flap, from 2 to 3 inches away from it. If the inward pocket seems too deep, the belly of the muscle is sometimes bluntly perforated with the dressing forceps, always, of course, parallel with the direction of its fibers. The two halves of a divided large drainage tube are pulled through the incision, the upper end being made to rest in the groove of the axillary cavity near the chest wall. Each outward end is secured with a small safety pin. When there is fear of the tube being moved, during the subsequent work, the upper end is fastened to the nearest tissues with a stitch of finest catgut which will become absorbed within a few days. A smaller gutter drain is inserted at the upper angle of the wound, running inward to the divided tendon of the pectoralis major muscle. There is usually some parenchymatous oozing in this region, although the bleeding surface of the stump has been doubled up by running catgut suture.

(c) Suture of wound: A small sharp hook is placed in the upper angle of the wound by the assistant standing next to the operator; upper and lower flap are stretched by the first assistant pulling them well towards the sternum; continuous suture, with catgut, as far as possible, pulling the lower flap upward and inward as much as feasible, in order to secure a proper reformation of the axilla (Fig. 11). In case of tension, a few interrupted sutures are added until the preserved stump of the belly of the pectoralis minor is reached. The same manoeuver is carried out at the opposite angle of the wound, except that here interrupted sutures will sometimes have to be employed instead of the continuous suture. A large defect is now visible (Fig. 12).

As mentioned before, I have found, in the course of my work, that by preserving a small stump of the belly of the pectoralis minor muscle, usually two-thirds of the lower defect border can be stitched to this stump by a continuous catgut suture. This, of course, materially reduces the size of the defect, besides improving its surface for the purpose of grafting (Fig. 13). This suture begins at the place where the running suture of the outer part of the wound reaches the chest wall and preserved stump of the belly of the pectoralis minor muscle, respectively. I have tried all kinds of sutures, interrupted, mattress, etc., and have come to the conclusion that an ordinary continuous suture best answers the purpose. When trying to turn the cut surface of the skin of the upper wound border down to the chest wall, sufficient muscular tissue will generally be found to be lacking, in which case a few interrupted stitches grasping some of the tissue of the intercostal muscles will have to be used to bring the cut surface of the skin of the flap border in as close proximity to the chest wall as possible. Of course, the knots must be placed on the skin so as not to interfere with the subsequent grafting (Fig. 13). Careful future observation of patients, thus treated, will show whether this preservation of a small stump of the pectoralis minor muscle in those who come to operation early, is an advisable procedure. I would mention that one can, of course, also get along without preparing the area to be grafted on, in the manner just described. I myself have, for eight years, grafted directly upon the chest, putting special grafts also on the cut surface of the subcutaneous fat all around the wound; but the surface of the depth of the wound is naturally not so even.

Sixth Step.—This consists of grafting the defect. Experience has taught me, that it is best always to graft immediately after operation.[6] Both thighs having been prepared, I never run short of material, no matter how large the area to be covered. I cut the grafts as thin and long and wide as possible, placing them in a line running parallel with the longitudinal axis of the body; the ends are made to rest on the skin, their borders overlapping, as the shingles of a roof (Fig. 14). Great care is needed to press out all bubbles of air and to thoroughly flatten out the borders, which have a tendency to curl. Saline water is, of course, used during the entire procedure, whenever necessary.

Seventh Step.—This is the dressing of the wound. While the assistant covers the superficial thigh wounds with long strips of sterilized rubber tissue, one overlapping the other, to be covered with aseptic gauze and held in place by two long strips of zinc adhesive plaster, surrounding thigh and dressing in serpentine shape and running in opposite directions, the operator covers the grafted breast area, including the adjacent borders of the skin flap, with similar long strips of sterilized rubber tissue,[7] placed in a horizontal direction. A few pieces of shaken gauze are then put on top and held by the assistant; small pieces of divided compress are pushed under the safety pins securing the drainage tubes, just as we are wont to do in other operations, and the entire operating field is covered by plenty of loose gauze, with compresses on top. Meanwhile the patient has been pushed upward, and the headpiece of the operating table having been lowered, the upper half of the body, supported by the anesthetist and the assistants, is well exposed for applying the dressings. The arm is placed across the chest, the axillary cavity having been previously filled with large pads of sterilized cotton batting. The same style of pads are placed on top of the entire arm, and a Desault bandage is applied with ordinary white gauze bandages. Then the patient is put to bed and the elbow supported by a small pillow.

TIME CONSUMED BY THE OPERATION.

The average time required from the beginning of the operation to the completion of the dressing is about two hours. I have, in a number of instances, done the work

6. During the first years of this work I grafted skin from eight to ten days after operation. The defect was not curetted, but the grafts were placed on the granulating surface, without the latter having been touched. The grafts took in the majority of the cases, but patients consider skin-grafting a serious operation, and they dread it, so much the more if the first attempt is unsuccessful and the procedure must be repeated. Surely, time, pain and annoyance can be saved our patients by always grafting at once.

7. After much experimenting, regarding the best dressing for the grafted area, including the celluloid nets of Kuhn (*Centrabl. f. Chir.*, p. 613), I have come back to the imperforated rubber tissue as the best. Open wound treatment, viz., exposing the grafted area to the air, would be still better, but asepsis requires a sterile dressing.

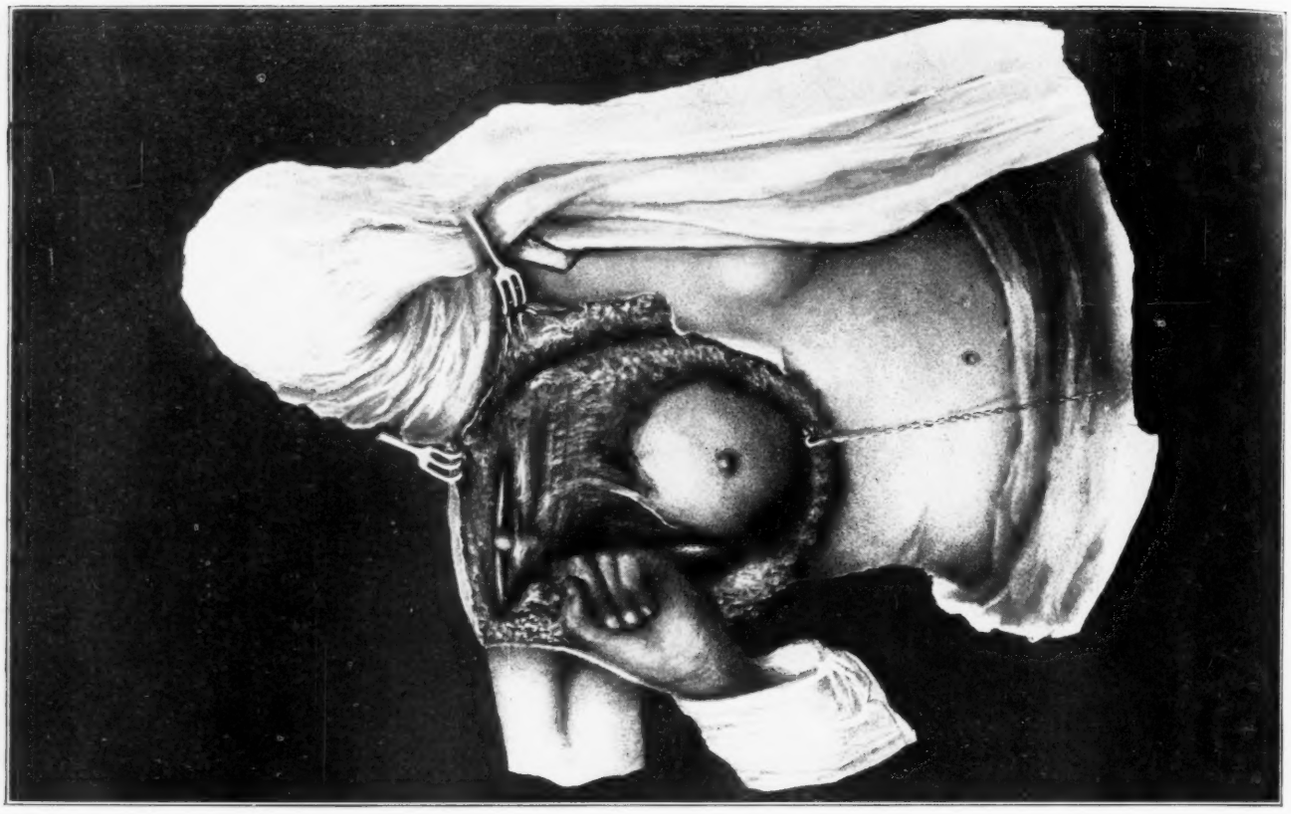

Fig. 5.—Insertion of pectoralis major muscle exposed. Operator's left index finger encircling its tendon.

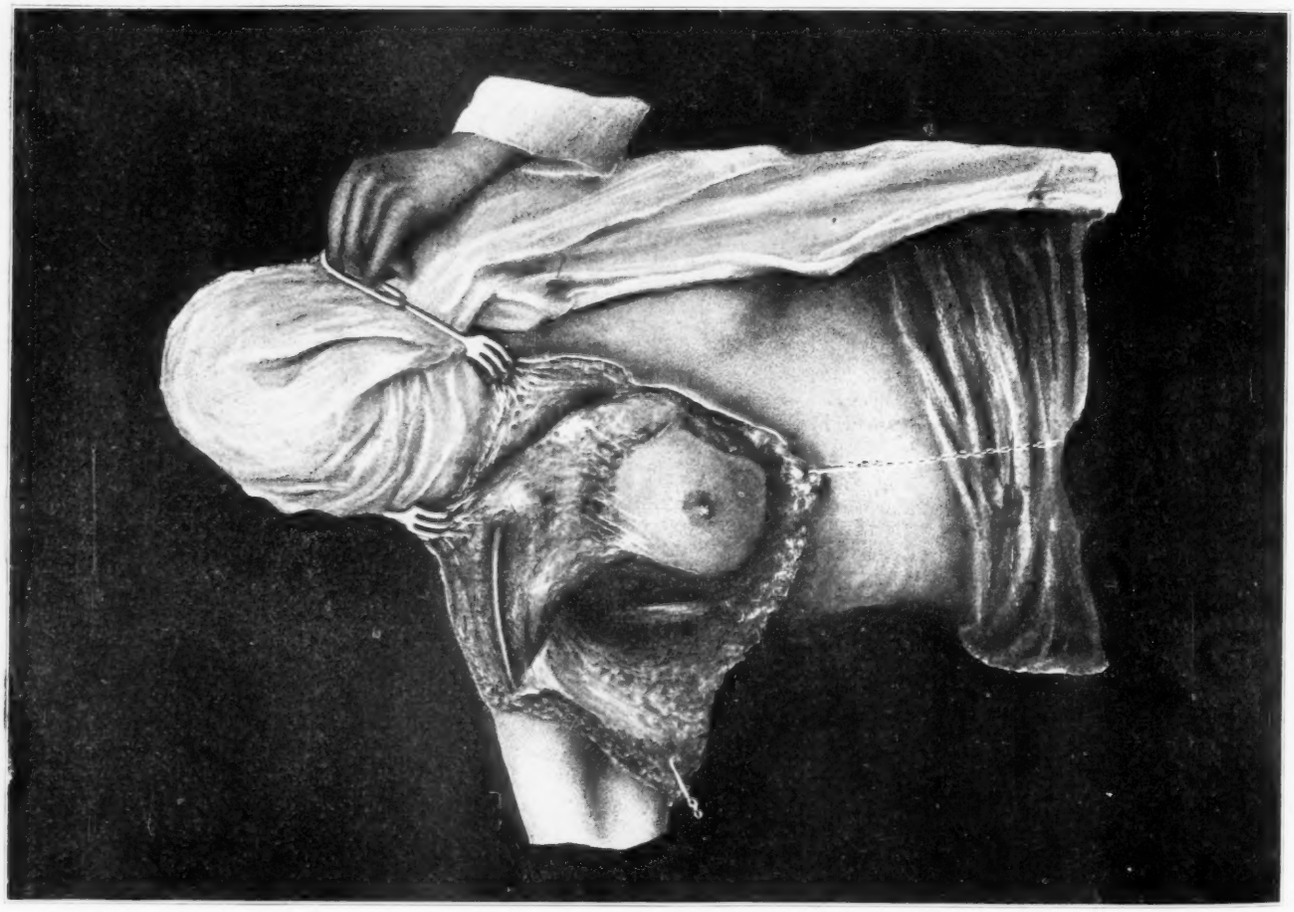

Fig. 4.—The two skin flaps turned back. Border of latissimus dorsi, cephalic vein and clavicle with the sternoclavicular articulation, the landmarks, exposed.

in from one hour and ten minutes to one hour and thirty minutes, and once, in a very difficult case, necessitating immediate excision of infiltrated supraclavicular glands, required three hours in which to do it. The cutting part of the operation, such as stated above, can usually be accomplished within from twenty-five to thirty minutes. I have done it in twelve, sixteen, eighteen and twenty minutes. I am aware, of course, that in this kind of an operation speed is not a paramount consideration; still, it is an advantage, other points being equal.

AFTER-TREATMENT.

For the first twenty-four hours, the patient is kept flat on her back, with the lower end of the bed slightly raised, if needs be (in anemic patients). From the next day on, the patient may have one or more pillows, according to individual desire. The elbow remains supported by a small pillow. After considerable experimenting as to the best time for changing the first dressing, I have decided on the sixth day, when it will almost invariably be found that the grafts have taken well. One of the long split drainage tubes is removed at the same time; the other, as well as the smaller tube at the upper angle, is materially shortened, and a wet dressing with Thiersch's solution is applied.

The second dressing is changed two days later, when the tubes are removed entirely and the small wound in the arm that gave exit to one of the tubes is covered with borated vaselin on sterile gauze, and which is held in place by two straps of zinc adhesive plaster. The grafted area and posterior drainage wound are covered with aseptic gauze soaked in 1:5000 nitrate of silver solution (to be gradually increased to 1:3000) which is useful in preventing the small, cauliflower-like granulations that so frequently spring up between the edges of the grafts, from becoming too abundant and overhanging.[8] In spite of this precautionary measure, they often appear and need clipping and cauterizing. The arm is left out of the sling after the second dressing; soon the patients are made frequently to move and to raise the arm above the head. After they are up and about, they are taught to stretch the arm with the hand resting against the wall or on anything of sufficient height to enable them, by bending their knees, to give it perfect elevation. Another exercise is to lift the arm, when flexed at the elbow, sufficiently high to form a right angle with the body and then push it horizontally backward. They are always able to dress themselves without assistance when sent home. These exercises are of greatest importance in shortening the time needed to regain normal mobility of the arm.[9]

In cases in which the grafts did not take, or in which they took partially only and in which there was a tendency to border-necrosis of the flaps, I have in recent years resorted to open-wound treatment. As long as the patients are in bed it is, of course, easy to arrange the dressing around the defect so that the sterile gauze stretched over the partially granulating grafted area does not touch the wound. When patients are up and about, however, it is very difficult. In these cases I have found a little contrivance, devised by Dr. E. Hochheimer of this city, very useful. It consists of the one-half of one of the so-called artificial busts as they are sold in our large department stores. This cup-shaped arrangement is tied over the grafted area by means of tape passed through its pierced corners; it will serve as a protection, under the patient's dress, so that open-wound treatment can be safely continued. Under this arrangement, the most sensitive grafts are often seen to continue to spread over the still open surface.

The patients are usually out of bed on the seventh or eighth day and leave the hospital or my immediate care after two weeks. According to the time required for wound healing in the individual case, cicatrization becomes perfected within from three to four weeks after operation. It is a good plan to have the patients spread some lubricant over the grafts and scar every night before retiring later in order to avoid scaling.

RESULTS OF OPERATION.

During the ten years covered by this report, I have operated for primary cancer on seventy patients, the above described method being employed in every instance. It is needless to state that the clinical diagnosis of carcinoma was invariably confirmed by microscopic examination of the specimen after the operation. As to the proportion of scirrhus and adenocarcinoma I am unable to give the exact data, although I know that there were very few of the latter. Of these seventy patients, one died in direct connection with the operation, however, not as a result of it. This was a diabetic, having 8 per cent. of sugar, who passed into coma on the third day after operation, without showing any symptoms of wound complication. I personally had strongly advised against operation, but the family, foreseeing the inevitable suffering the patient would have to go through, if the disease were left to itself, insisted on operative intervention. Another patient, 49 years of age, died shortly after her second operation. Radical operation for carcinoma of the right breast had been performed by me on July 23, 1901. She made a rapid recovery, but nine months later I was called in to operate for a metastatic tumor that had developed in the opposite breast. I again operated radically, and the patient stood the operation as well as she had stood the first. Two days later, however, she commenced vomiting blood in large quantities. Palpation revealed the presence of a well-defined nodular tumor in the gastric wall, evidently a carcinoma. The patient not having complained of stomach symptoms before the operation, I had omitted, contrary to my usual custom, to examine her abdomen. Hematemesis continued for 36 hours, and, in spite of all our efforts to relieve the condition, she died at the end of this time, primary union of the wound meanwhile having taken place. Autopsy was refused, but there can be no doubt that death was due to continuous hemorrhage from a neoplasm within the stomach.

Surely, neither of these deaths can be attributed to the operation as such; besides, the operation in the second case was done for a metastatic tumor, not for primary carcinoma.

Another patient on whom I did the radical operation on both breasts, the second operation twenty-one months after the first, is alive and well to-day. Hence, it appears that in a series of seventy-two operations on seventy patients with carcinoma my mortality has been *nil*; or, counting the diabetic patient who died as a result of coma, 1.4 per cent.[10]

8. This kind of after-treatment of the grafted area was proposed a few years ago by Dr. O. Hensel of this city, former house surgeon of the German Hospital.

9. It is advisable not to commence these exercises before the tenth to twelfth day. If begun too soon the border of the lower flaps may be torn off the outer border of the grafted area, an accident which would retard convalescence.

10. Besides these 72 operations, done for carcinoma, I have had two patients, one with an encapsulated melano-sarcoma, the other with a large cysto-sarcoma, on whom I also used this radical procedure. Both recovered.

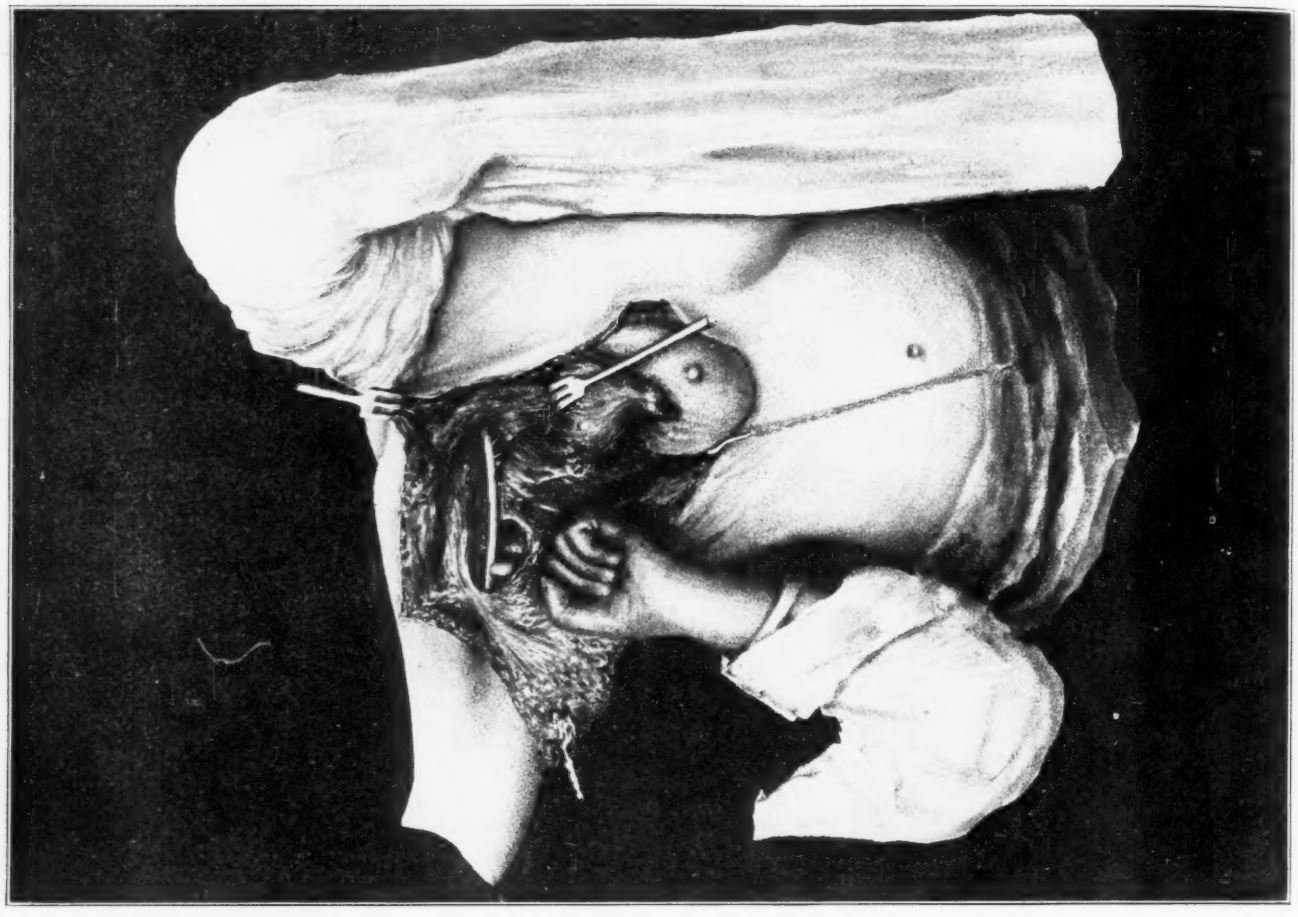

Fig. 7.—Subclavian and axillary veins fully exposed. So far, glands and fat tissue not removed; smaller vessels still in connection with main trunks. Finger under fat toward sulcus bicipitalis, its nail resting on axillary vein.

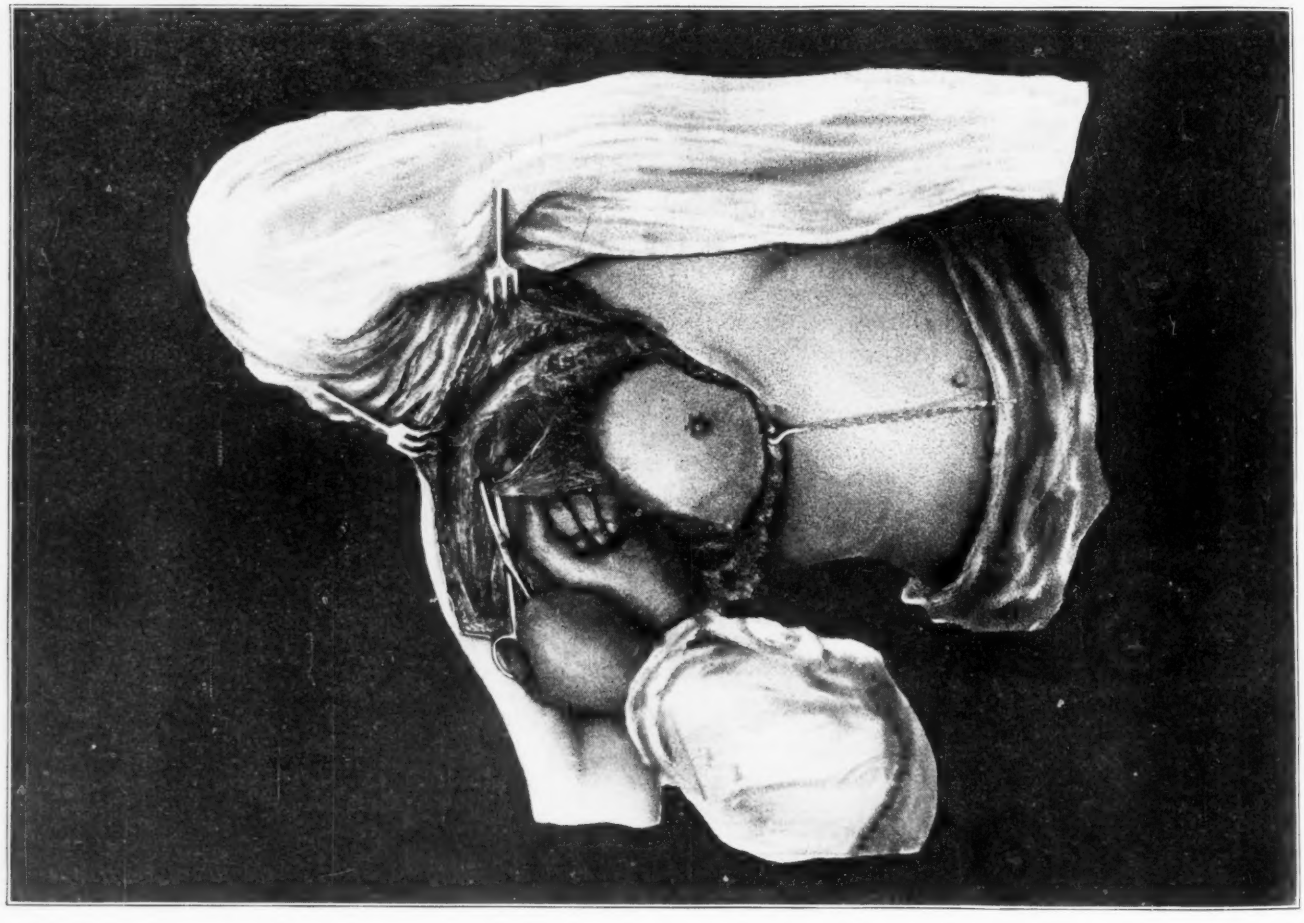

Fig. 6.—Finger under tendon of pectoralis minor muscle. Above, cut surface of clavicular portion of pectoralis major parallel to clavicle is visible. (In the living, the belly of the pectoralis major is not so thoroughly detached from that of the pectoralis minor. It is done here to show the latter's tendon.)

CHARACTERISTICS OF THE OPERATION.

As will be seen from the description of the technic, in my operation, the surgeon works his way from the axilla downward and inward, i. e., from the insertion of the muscles to their origin, instead of in the opposite direction, as followed by Halsted. This enables the operator, after the formation of the two flaps, primarily to expose and to secure the feeding blood vessels close to their trunk, instead of first encountering their smaller branches, and then re-encountering their larger branches, as is inevitable when working from below and inward toward the axillary cavity.

From an anatomic point of view, therefore, I think the method must be conceded to be superior to those in which the operator works his way in the opposite direction. Besides, it is thorough, simple, safe and bloodless, a typical procedure. The technic does not permit of further improvement, except the future should show it to be a good plan to follow up the chain of glands into the supraclavicular space in every instance, with or without temporary division of the clavicle at the place where the subclavian vein dips underneath it.

I am sure the method will appeal to any one who has seen or done it.[11]

There is no shock. During my ten years' experience, I have found it necessary but once to give an intravenous saline infusion after the operation. This was in a much reduced, elderly patient, with far-advanced glandular involvement around the veins, in whom a supraclavicular operation had to be added at once. In no other case was intravenous infusion or hypodermoclysis required; a rectal saline with whisky and strychnin, usually given immediately after operation, always sufficed for stimulation in weak patients.

FUNCTIONAL RESULTS.

Inasmuch as in this operation the tendon of the pectoralis major muscle is primarily divided close to the humerus, the entire belly of the muscle, i. e., the pectoral plus the clavicular portion has to be excised as a matter of course. The latter having a blood supply of its own and special lymphatics, its preservation as practiced in Halsted's operation would probably have no bearing on local recurrence of the disease. The removal of the clavicular portion, however, does not mean any serious addition, and the clean and thorough removal of the glands and fat alongside of the axillary and subclavian veins is thereby materially simplified.

Time has shown that the *total* removal of the pectoralis major muscle does not mean mutilation, as it was thought by some colleagues ten years ago, when I first brought out this method. On the contrary, my patients have always been much pleased with the free and perfect use of the arm they have obtained. Ability to assume the posture of the Statue of Liberty is the rule, not the exception (Fig. 15). Besides, the arm remains strong and useful. Quite a number of poorer patients scrub and wash without any discomfort.

In a few instances, in which an exceptionally large portion of skin had to be removed with the tumor, patients complained of a feeling of tightness during the first few months. This feeling, however, gradually disappears as the grafted area becomes mobile, generally after from three to six months.

The splendid functional result, i. e., the perfect mobility of the arm, which invariably follows this method, I think, speaks well for the operation. The gymnastic exercises employed as an aid in this direction have been previously described.

As a rule, no edema of the arm is observed; later, in some cases, a slight puffiness on the inner side of the elbow becomes evident, but a swelling of the entire extremity is rarely noted. Many years of careful observation have taught me that if such general edema of the arm sets in, it is not necessarily a sign that deep infected supraclavicular glands are pressing on the subclavian vein. I rather think that the unavoidable tying or cutting of large lymphatic vessels, simultaneously with severing the blood vessels near their trunks, and the broad and deep cicatrix after far-reaching preparation around the vein, often produce sufficient constriction to retard the lymphatic as well as venous current. In some cases, local venous thrombosis and later permanent occlusion of collateral veins are, perhaps, to be blamed. Massage of the arm usually has little effect here.

Flannel or elastic bandages compressing the arm from the wrist up to the shoulder have to be used in pronounced cases which, as stated, fortunately are rare.

SPECIAL OBSERVATIONS.

Under this heading, I would mention a few of the numerous interesting observations I have made in the course of years.

I fully agree with those who claim that cancerous infiltration of the supraclavicular glands means sure death. I have not a single case to record in which the patient was saved by operation after these glands had become involved. Very extensive affection of the glands above the collar bone I, therefore, consider an indication not to urge the operation. If, however, the glands are but moderately infiltrated at the time of the first operation, or if they become evident some time thereafter, they should be removed forthwith, for I think it the surgeon's duty in such cases to remove whatever can be reached with the knife so long as metastases do not forbid an operation.

In regard to the desirability of cleaning out the supraclavicular space at the time of primary operation *in every case,* without clinical evidence of the presence of cancerous glands in this region, my experience does not support the advisability of such procedure. In none of my ten patients who have remained well from four to ten years after operation were the supraclavicular glands removed. For the present, therefore, I consider it best not to invade this region, unless glands are actually palpable at the time of operation, in which case, of course, they have to be removed, and prolonged *x*-ray treatment should be added as a possible preventive against recurrence.

Reviewing my 70 cases in this connection, it appears that in 3 patients supraclavicular involvement was evident at the time of primary operation. The glands were removed with the breast. One of these, a diabetic patient (Case 7), 65 years of age, died, 2 days later, of coma. The other 2 also died within 9 months after operation.

Six of the 70 patients developed infiltration of the supraclavicular glands from 6 months to 3 years after the primary operation (Cases 3, 16, 29, 34, 53, 61);[12] none of the patients had presented symptoms of their

11. I was much interested to read that Dr. J. Collins Warren of Boston has also adopted this method of operation during the past year and finds it one that he can recommend as both safe and thorough. Annals of Surgery, December, 1904.

12. These and following numbers refer to the table attached to this article.

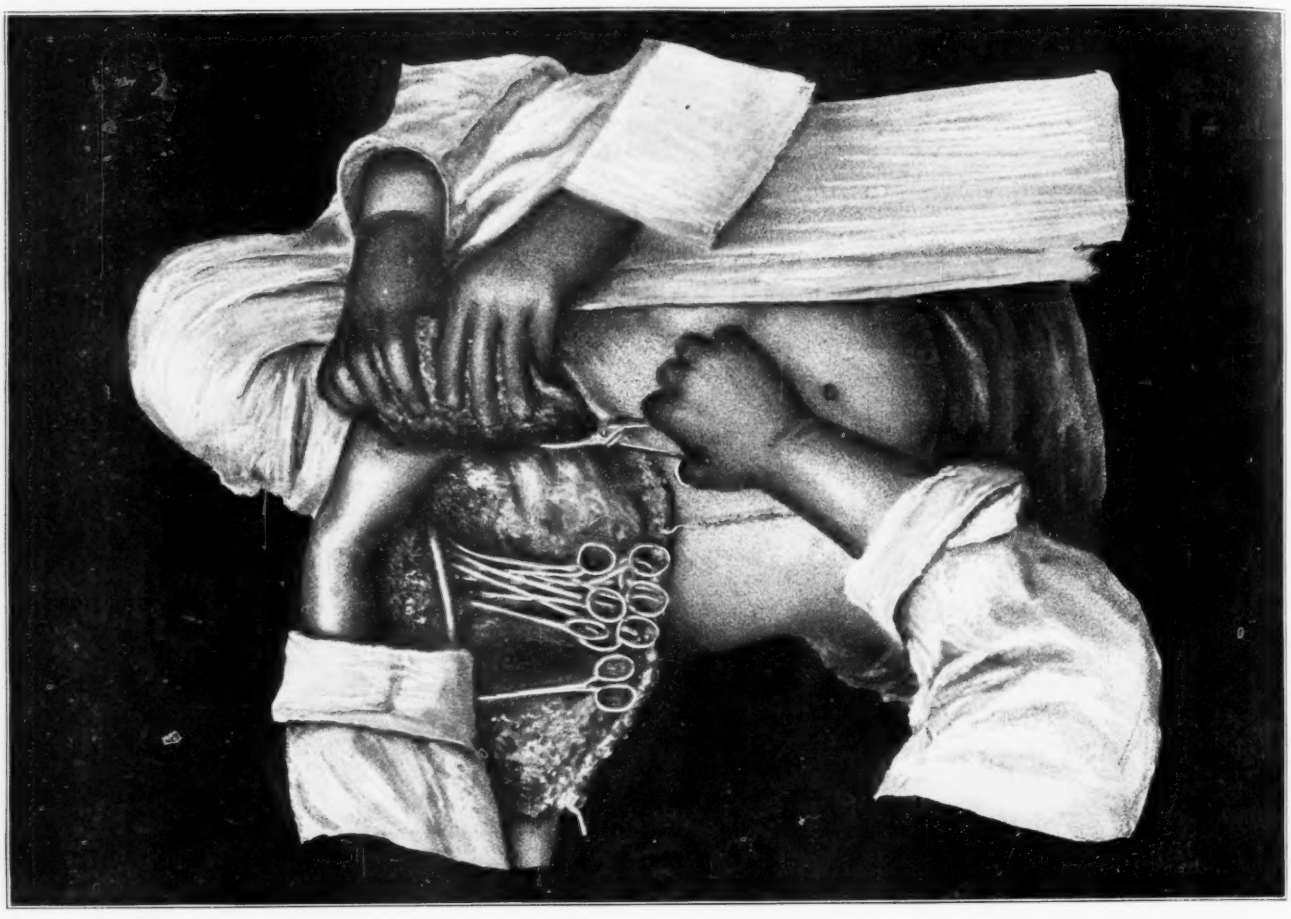

Fig. 9.—Pedicle of mass over sternum, ready to be cut off.

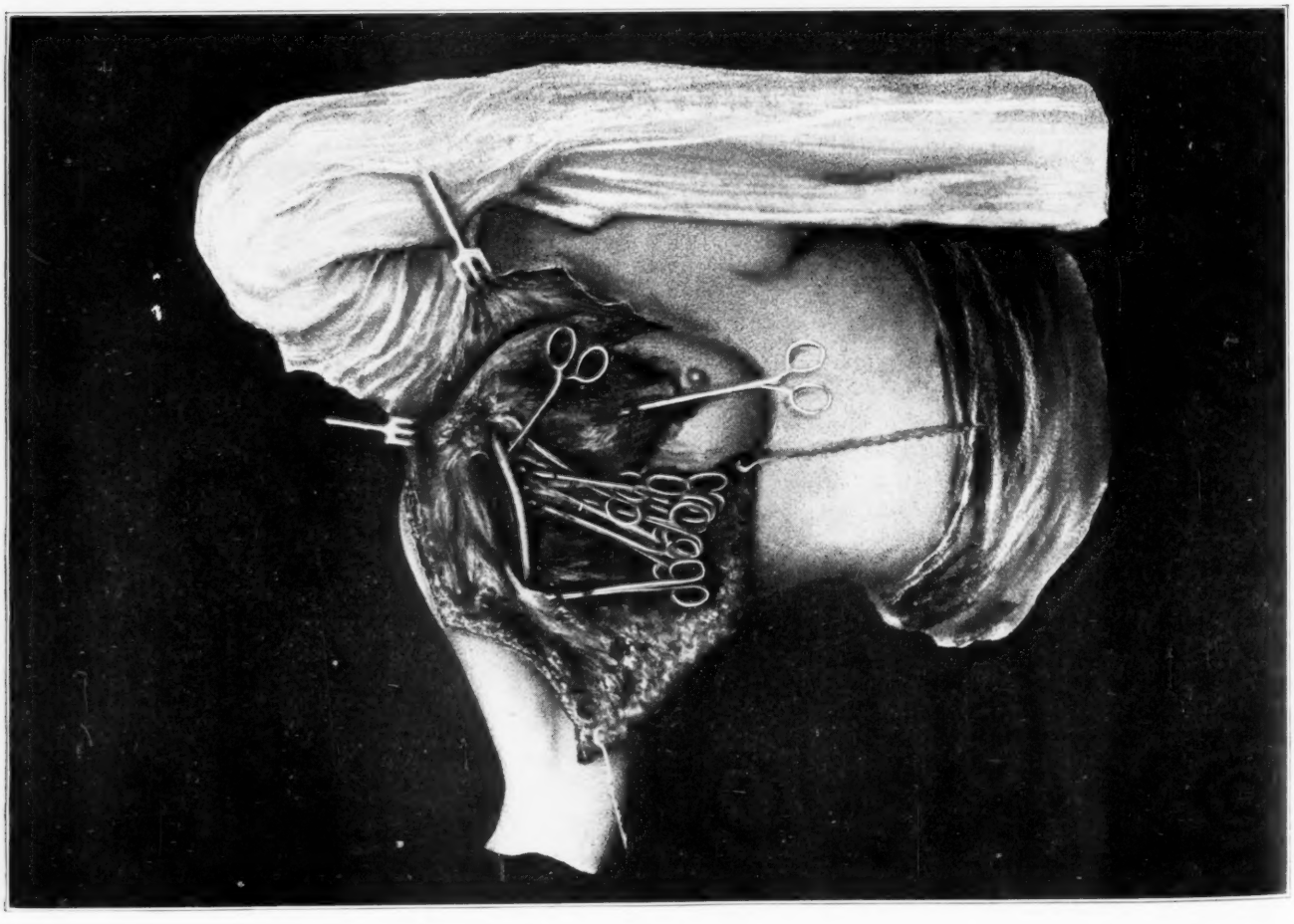

Fig. 8.—Axillary fat and glands stripped from lower surface of vein trunks. Muscles turned inward and downward; artery forceps in place, inasmuch as ligation is done at completion of operation.

presence at the time of the operation. Five of these were operated on, but every one died from 6 to 9 months after this second operation.

In the new book of Poirier, Cunéo and Delamere, entitled "The Lymphatics," translated by C. H. Leaf, a very excellent account of the lymphatic distribution of the skin and the mammary circulation with reference to the lymphatic glandular drainage is given (p. 215, etc.)

In agreement with what would be suggested by the lymphatic distribution therein described, one would have to expect involvement of the supraclavicular glands only in cases in which the growth is found in the upper two quadrants of the breast, and particularly when it involves the skin and therewith the subcutaneous tissue over this region.

I shall pay strict attention to this important point in the future and excise the supraclavicular glands simultaneously with the mammary carcinoma whenever there exists cutaneous involvement of the upper portion of the breast.

It is interesting to note how sometimes one or more enlarged glands in the neck become seemingly stationary.

I have under observation one patient, operated on two years ago, in whom two small, hard, movable glands, situated in the middle of the posterior border of the respective sternocleido muscle, have remained unchanged in size and appearance for almost a year, which would suggest either that the *x*-ray treatment has brought about this cessation in growth, or that they were not malignant at all, but simply swollen by some irritative process. So far I could not find the indication for their removal.

As regards frequency of recurrence in the opposite breast, my record shows but 4 such cases, or 5.71 per cent. In 3 of these it occurred in conjunction with internal metastases; in the fourth the disease had evidently reached the breast directly by way of the lymphatics (25). This patient is still alive and well, 4 years and 9 months after the second operation.

In one patient with a very painful, recurrent carcinoma of the axillary cavity, treated in 1896, when I still largely used methyl violet in the treatment of inoperable cases,[13] injections with a solution of fuchsin produced great subjective improvement. Within twelve hours after one of the injections, an eruption of miliary nodules, closely resembling acute eczema, appeared and spread over the entire operating field, including the grafted area. At first I looked on the trouble as an acute eczema, but soon found that the small elevations increased in size and each developed into a rapidly growing, disseminated, carcinomatous nodule. I am at a loss to explain this phenomenon, except possibly on basis of the parasitic theory of cancer, assuming that a focus perforated into the artery supplying this part of the body, carrying infectious material into the remote capillary branches as emboli. The experience certainly seems worth recording.

Another case worth noting is that of a patient referred to me for radical operation for a rapidly growing cancer of the breast resembling cystic sarcoma, but being hard and raised. Three sisters, every one married and the mother of children, had died of cancer of the breast, in various parts of the country; there was no hereditary history. The patient's anxious look made it seem cruel to refuse operation, and so I proceeded against my better judgment; of course, informing the husband of the hopelessness of the situation.

In the second week of the after-treatment total thrombosis of the left femoral vein set in, which forced the patient to stay in a horizontal position for eight weeks. Nine months later she died of local recurrence, involving pleura and lungs. Thrombosis of the femoral vein, usually the left, is a rare sequel of amputation of the breast. It is now and then seen following major operations, especially abdominal ones.

In still another case, in which I removed a recurrent cancer of the axillary cavity, the tumor had grown into the wall of the axillary artery. Suture of the resulting defect of the arterial wall being impossible, division of the vessel between two ligatures stopped hemorrhage.[14] The patient retained perfect use of the arm until death, fifteen months later. In this case I had, two years previously, removed a tumor of a supernumerary axillary breast which, on microscopic examination, proved to be carcinoma. The outcome seems to show that radical extirpation of the whole respective breast ought to be added at once in these rare cases.

In a few instances in which the tumor seemed to belong to the benign class, local extirpation was done first. In one of these, a young girl of 19, with a deep-seated, movable tumor, the latter was found to be a melanotic sarcoma. Radical operation was done. The patient was well eight months later, when she returned to Europe. This case, while included in the number of operations done by me, is, of course, eliminated from the statistics.

In another case, an unmarried woman aged 46, the disease presented the characteristic picture of diffuse fibroma and partial extirpation was done. Microscopic examination revealed in one place, beginning unquestionably malignant disease. Radical operation was promptly added.

In one patient (aged 32) I removed a fibroadenoma (local extirpation). She was entirely well for ten years, when the radical extirpation of the same breast for carcinoma became necessary. Eight weeks after the latter operation, exploratory laparotomy revealed cancer of both ovaries with intra-abdominal metastases.

I have found that quite a few patients complain of neuralgic pains in the arm and scapula for some time after the operation, in rare instances also in the supraclavicular region. This is evidently due to traumatic neuritis and can often be overcome by electrical treatment and by the use of the *x*-rays. One patient, in whom scapular pains persisted (two years) after operation on the right breast is afflicted with gallstones.

It has surprised me to note how often the spinal column was the seat of metastases in my recurrent cases. This at first is frequently mistaken by physicians as well as patients, for chronic rheumatism. It is difficult, with our present knowledge of the subject, to explain this phenomenon. Some authors consider minute effusions of blood into the body of the vertebræ

13. Annals of Surgery, November, 1893.

14. During the entire ten years, from September, 1894, to September, 1904, I did not come across a single case in which I had to resect the subclavian or axillary vein; while in course of the last winter I had occasion to do so three times. In every instance the subclavian plus axillary vein was removed together with the mass, from a point just below the entrance of the cephalic to a place corresponding to about the beginning of the bicipital sulcus. This procedure wonderfully facilitated the otherwise particular difficult preparation. No disturbing sequelæ, e. g., edema, embolic processes, etc., were observed. Of course, great care was taken not to tamper with the cephalic vein or with the proximal part of the subclavian beyond the entrance of the former.

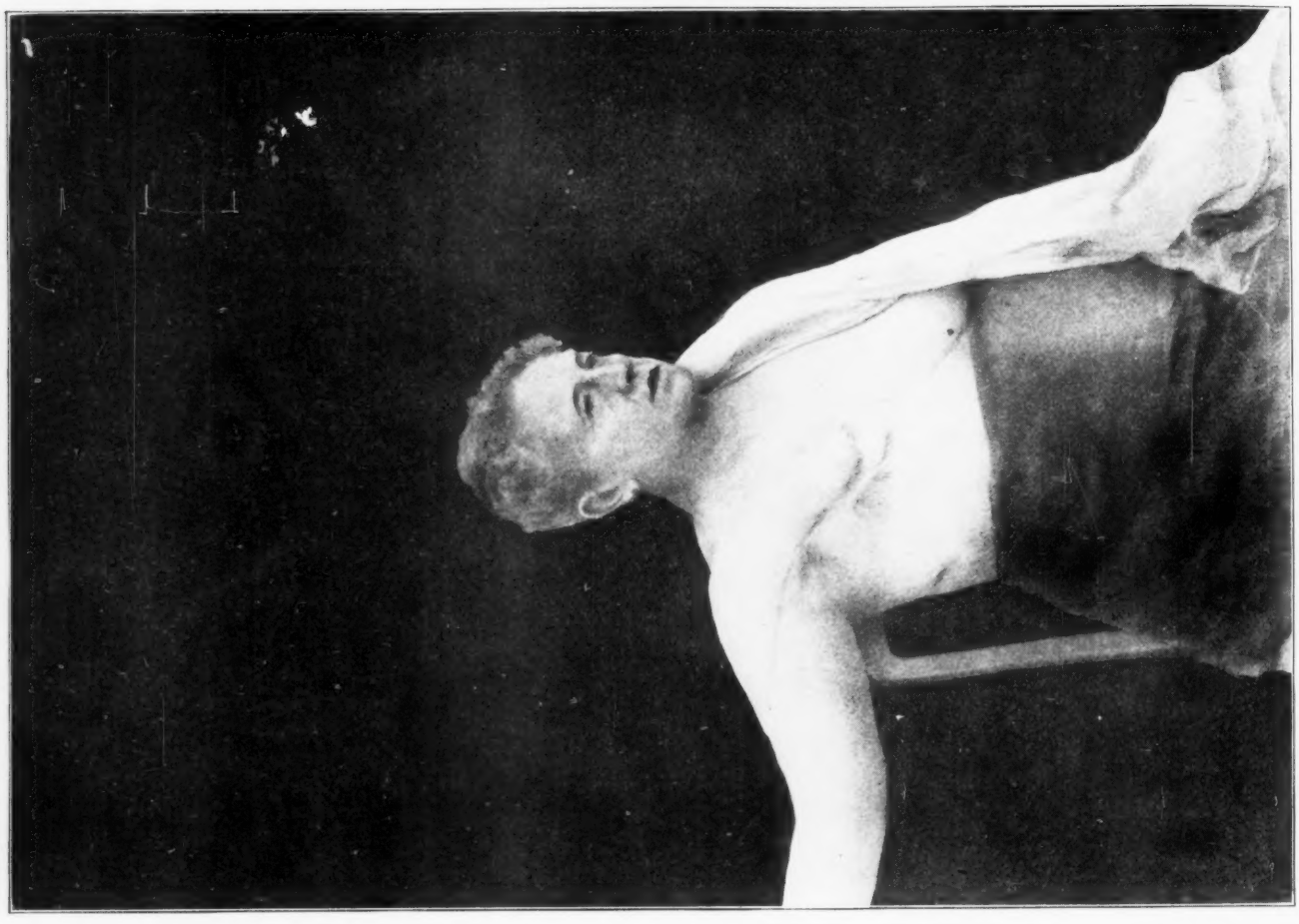

Fig. 11.—Showing reformation of axilla. See case 30 of table, operated on July 30, 1899. The irregularity of the chest wall as it appears in the illustration above the median extremity of the scar is the result of a rather protracted suppurative process over two ribs near the sternum. This was caused by the perichondrium and part of the periosteum having been stripped off the respective costal cartilages and ribs by the first assistant, who had pulled on the mass toward the completion of the operation instead of merely supporting it. Its course, necrosis followed.

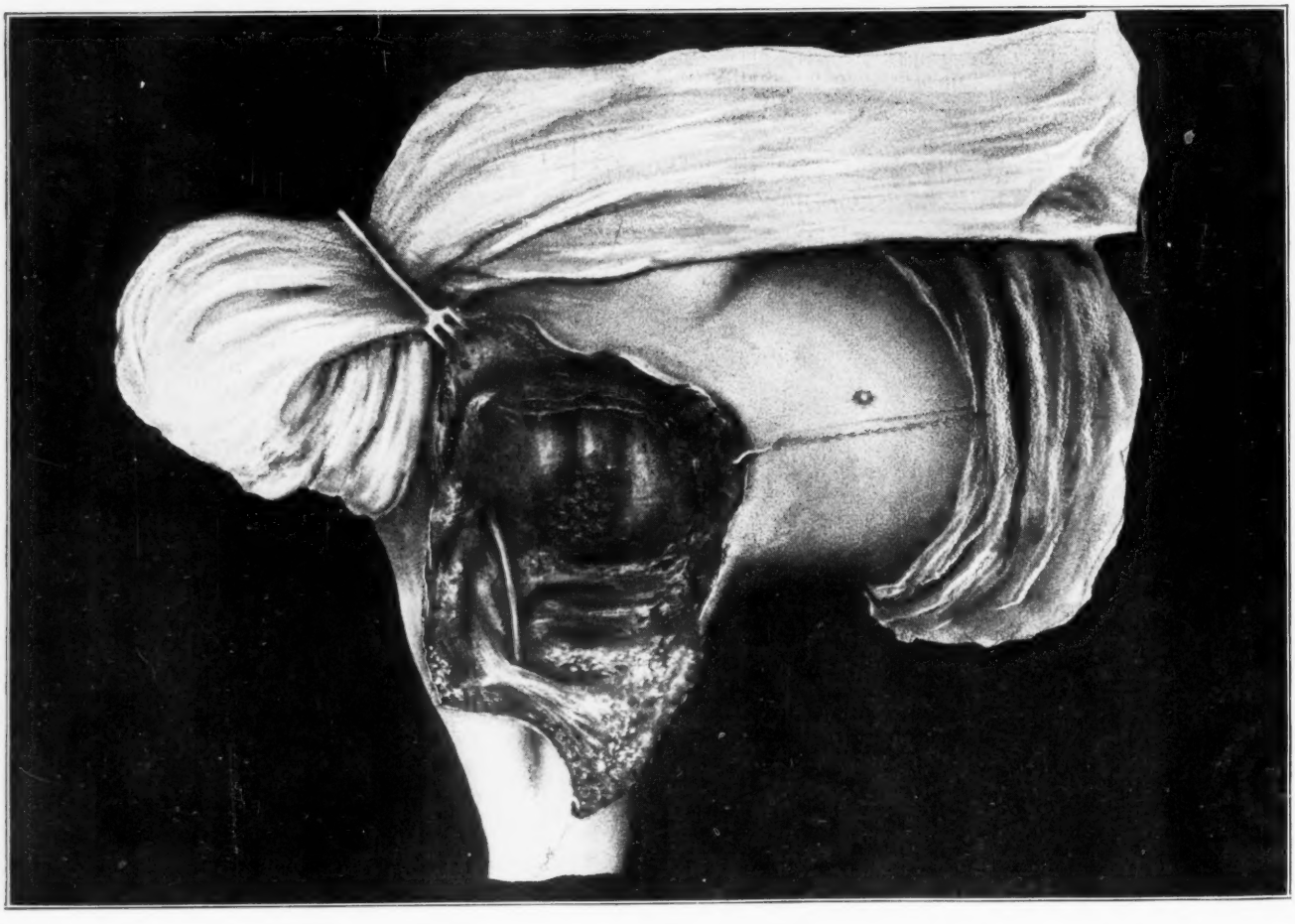

Fig. 10.—Operative field, after removal of the mass. Stump of pectoralis minor muscle is visible.

as they do occur in our daily life, consecutive to slight traumatisms, a *locus minoris resistentia,* and at the same time a favorable place for the development of metastases.

While it has been my experience, also, that a somewhat retracted nipple, raised above a line drawn horizontally from the opposite nipple constitutes the pathognomonic symptom of malignant involvement in the vast majority of cases (scirrhus), the absence of this sign should not influence the surgeon against the diagnosis of malignant disease, as the tumor may be an adenocarcinoma. At a time when I attributed rather too much weight to this symptom, a clinically doubtful case came under my care. The tumor was comparatively small, freely movable and the skin was not adherent; the nipple was not raised, but on the contrary, rather lower than on the other side, and not retracted. I contented myself with simple extirpation of the breast and axillary glands. Microscopic examination proved the tumor to be an adenocarcinoma. Prompt secondary radical operation was refused. This patient soon developed a rapidly growing local recurrence, evidently springing from the fascia of the pectoralis major muscle.

My cases show clearly that wherever local recurrence has been observed, the grafted area was of small size; in other words, local recurrence has appeared when skin was saved when making the first cutaneous incisions. I have, therefore, made it a rule during the last few years to have the skin incision completely encircle the *very base* of the breast, a step which I consider most essential.

As regards the time limit at which a patient may be considered cured, I would mention the following case which again shows the fallacy of accepting a three or five years' freedom from recurrence as proof of a cure:

This patient (17) was operated on in February, 1897 and while she considers herself well to-day, reexamination in March, 1905, showed a regional recurrence in the shape of a few small, disseminated nodules below and at the inner border of the area grafted on. The patient states she first noticed these a few weeks ago, but attached no importance to them.

Volkman's view that "after two years usually, and after three years almost without exception, one may feel sure of the result" certainly can no longer be accepted as correct.

A very interesting article on the question of what constitutes a cure after operation for cancer, has recently been brought out by Jordan of Heidelberg in an article entitled "Late Recurrences of Carcinoma."[15]

In this he proves that the so-called permanent cures are frequently merely a temporary cure of longer duration. It is true that the greatest number of recurrences occur in the first or second year after extirpation of the growth, and this is the reason that prompted surgeons to the establishment of the "three-year limit" which gynecologists have of late extended to five years. Jordan states: "It seems the great majority of cancerous tumors develop rapidly and, hence, are followed rapidly by recurrence, usually within the first or second year after operation. However, a small percentage grow slowly and in these the recurrence, likewise, appears a longer time after operation, from 4 to 6 to 8, 12 or even 20 years later."

He adds that "in view of such experience it may well seem a question as to whether we are ever justified in pronouncing a patient cured after operation for cancer."

In this latter statement I do not agree with Jordan. I believe in a cure of cancer, provided operation be done at an early stage of the disease.

STATISTICS.

Statistics are not always fair. If the originator of a method of operation selects his cases, the statistical results will of course commend the procedure. If, on the other hand, he employs the method regardless of statistics, the results may be misleading. In cancer of the breast, for example, the virulence of the disease, or the invisible advance made by the neoplasm into the surrounding parts or into remote parts of the body, often mar the result of the most excellent operative procedure.

My cases have been operated on as they came along unless they were absolutely inoperable. This has been my course, because to refuse an operation, would be equal to passing final judgment, or prematurely signing the patient's death certificate. The only case, that of a patient with a rather far advanced scirrhus of several years' growth, in which I advised postponement of operation, on account of good general condition and an intended trip South, called in another surgeon, who promptly amputated the breast. It stands to reason that by operating almost indiscriminately, my statistics have not been improved.

From September 1894, to September 1904, I have done this operation 74 times in 72 patients. One was performed in order to be as radical as possible after a small, movable, encapsulated tumor had been removed, which, on microscopic examination, proved to be a melanosarcoma. Another patient also operated on radically, had a very large cystosarcoma of the breast. Both of these cases will, of course, not be counted in the statistics, which relate to carcinoma only. Thus 70 cases with 72 operations remain to be considered.

Of these, 69 patients were female, and 1 male; the youngest female being 28 years, the oldest 72; the man was 44 years old. Classified into decades, I have had:

1 patient from 20 to 30 years of age.
13 patients from 30 to 40 years of age.
32 patients from 30 to 40 years of age.
14 patients from 40 to 50 years of age.
7 patients from 50 to 60 years of age.
2 patients from 60 to 70 years of age.
1 patient from 70 to 80 years of age.

70 cases.

Forty-four cases were private patients; 26 patients were operated on in the wards. Of the former, I have careful records as to their subsequent history; of the latter, three could not be located at the time of my last investigation, from January to March of this year.

In a great city like New York, with its ever-shifting population, it is not an easy task to keep track of one's patients operated on at the wards of the various hospitals. I owe it to the untiring efforts of Dr. Martin Rehling, of this city, that I am in a position to present correct statistics regarding all but three of my ward cases. I gratefully acknowledge this, and thank him once more at this place, for the kind assistance rendered.

Deducting the three patients who could not be traced, 67 remain for consideration here. Thirty of these were operated on from 5 to 10 years ago, i. e., between September 1894 and September 1899, and of this num-

15. Deuts. med. Wochft., 1904, June 16, p. 912.

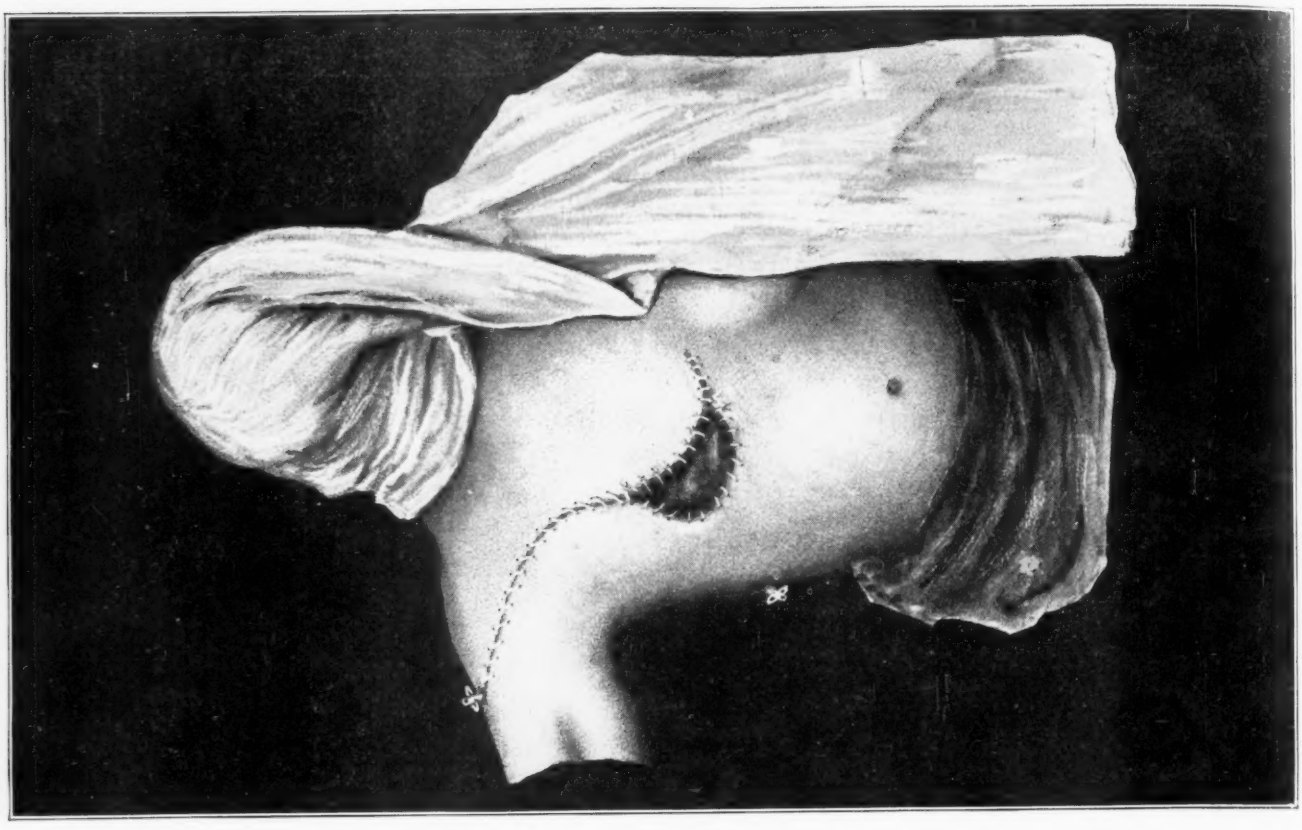

Fig. 13.—Showing the difference in size of the defect after its lower border has been stitched to the stump of the pectoralis minor, by means of continuous catgut suture, and its upper one fastened to the chest wall with a few interrupted stitches.

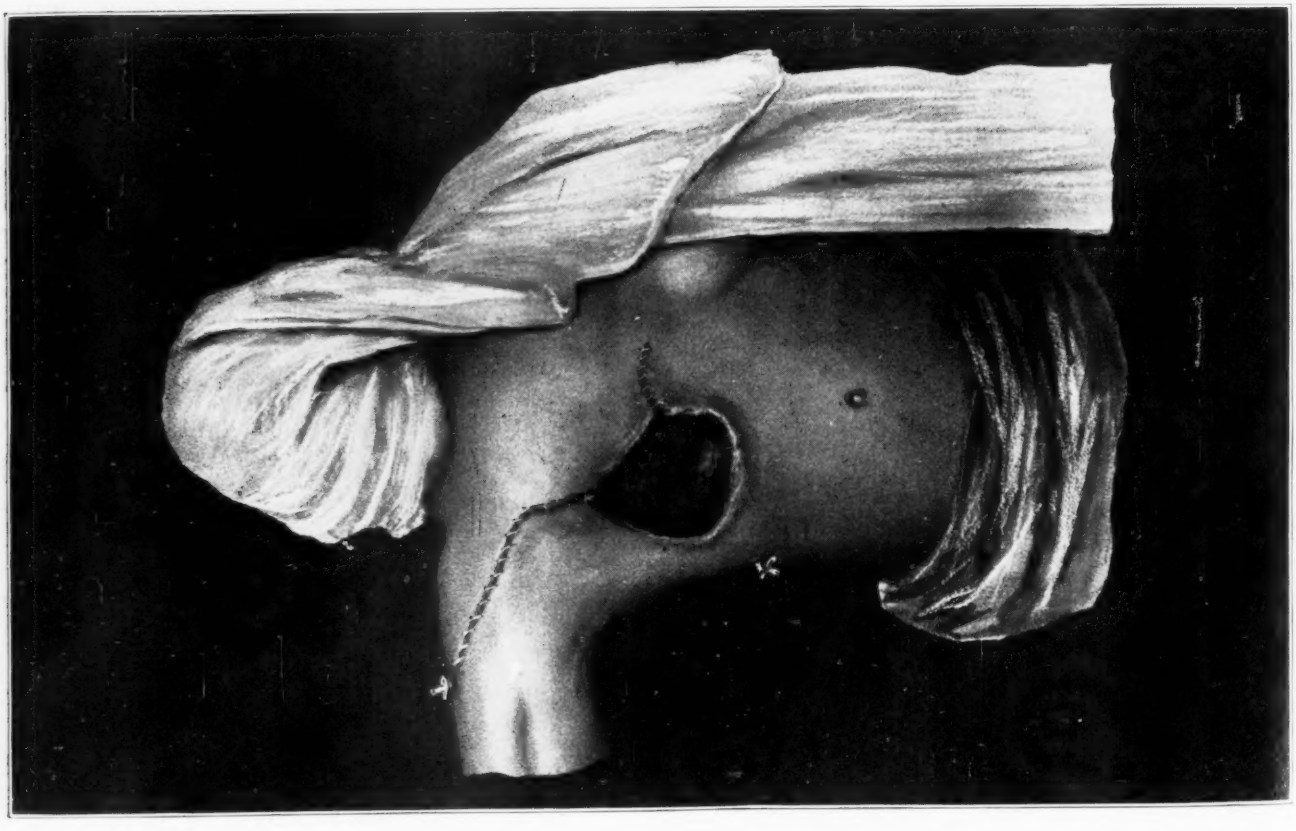

Fig. 12.—Drainage tubes inserted, skin sutured. Within the resulting defect which is not yet reduced, the stump of the belly of the pectoralis minor is visible.

TABLE OF RADICAL OPERATIONS FOR CARCINOMA OF THE BREAST.

No.	Date of Operation.	Name and Age, Married or Single.	Result.[16] Alive, Present Condition.	Result.[16] Died. Cause of Death.	Remarks.
1	1894, September 19	H. O., 39, m. .	Alive and well		
2	1895, March. . . .	I. S., 48, s.	Alive and well		
3	October	L. H., 47, s. . . .	. . . . .	Died Oct. 1896; regional recurrence (e) disseminated cancer *en cuirasse*.	Extirpation of supraclavicular glands, March 13, 1896; resection of cancer of rib. April 2, disseminated cancer appeared suddenly after parenchymatous injection of fuchsin solution.
4	November. . . .	L. D., 55, m. . .	. . . . .	Died July 2, 1902; endocarditis according to postmortem (coroner's case.)	
5	December. . .	A. H., 46, m. . .	. . . . .	Died March, 1896; intestinal metastases, and diabetes.	
6	1896, February . .	J. W., 60, m. . .	Alive and well		
7	March.	C. R., 65, m. . . .	. . . . .	Died 2 days after operation; diabetic coma.	Radical operation plus extirpation of supraclavicular glands.
8	May	P. G., 47, m. . . .	. . . . .	Died December, 1898; local recurrence; later metastases.	January 26, 1894, excision of cancer of supernumerary axillary breast, same side; May, 1896, radical operation of breast; Oct., 1897, axillary recurrence; extirpation; ligation of axillary artery.
9	May	A. L., 59, m. . . .	. . . . .	Died April, 1897; internal metastases.	
10	May	M. M., 40, s. . .	Not traced . .		
11	June.	M. C., 69, m. . .	. . . . .	Died Feb. 1900; internal metastases.	
12	July	R. S., 46, m. . . .	. . . . .	Died Oct. 1897; internal metastases.	
	September . . .	G. K., 18, s. . . .	. . . . .	. . . . .	Melanosarcoma; well 9 months later; left for Europe.[17]
13	October	E. A., 48, m. . . .	. . . . .	Died Dec. 1897; internal metastases.	
14	October	B. J., 57, m. . . .	. . . . .	Died Aug. 1900; internal metastases.	
15	December . . .	I. H., 49, m. . . .	. . . . .	Died March, 1899; internal metastases.	
16	1897, January. . .	I. E., 72, m. . . .	. . . . .	Died Nov. 1898; internal metastases.	July, 1898, extirpation of supraclavicular glands.
17	February. . . .	R. R., 45, m. . . .	Alive	. . . . .	Regional recurrence within last three months.
18	September . .	E. W., 36, m. . .	. . . . .	Died July, 1900; internal metastases.	
19	October	W. F., 38, m. .	Alive and well		
20	1898, June. . . .	S. S., 44, m. . . .	. . . . .	Died Jan. 1899; internal metastases.	
21	December. . . .	M. K., 43, m. . .	Alive and well		
22	1899, January. . .	M. R., 46, m. . .	Not traced . .		
23	February. . . .	A. S., 37, m. . . .	. . . . .	Died Jan. 1900; internal metastases.	Resection of rib at time of operation on account of involvement; temporary pneumothorax.
24	March.	J. C., 60, m. . . .	. . . . .	Died Nov. 1899; internal metastases.	
25	March.	L. L., 44, m. . . .	Alive and well	. . . . .	March 24, 1899, radical operation for cancer of right breast; Dec. 7, 1900, radical operation for cancer of left breast. (See unnumbered case following 41).
26	May	S. E., 53, m. . . .	. . . . .	Died April, 1901; internal metastases.	
27	May	V. B., 64, m. . . .	. . . . .	Died Jan. 1901; internal metastases.	
28	May	F. S., 39, m. . . .	Not traced . .		
29	June.	M. F., 46, m. . .	. . . . .	Died Feb. 1903; internal metastases.	July, 1902, extirpation of supraclavicular glands.
30	July.	J. T. S., 56, m. .	Alive and well		
31	October.	R. G., 45, m. . . .	. . . . .	Died July, 1904, internal metastases.	Four weeks before radical operation excision of a portion of tumor for diagnostic purposes, by another surgeon.
2	December. . . .	C. R., 36, m. . . .	. . . . .	Died Oct. 1900; local recurrence and metastasis.	Far advanced case; father, mother and three sisters died of cancer.
33	December. . . .	A. B., 38, m. . . .	. . . . .	Died March, 1901; regional recurrence.	
34	1900, February . .	M. T., 36, m. . .	. . . . .	Died Dec. 1902; internal metastases	May, 1900, extirpation of supraclavicular glands.
35	March.	A. G., 61, m. . . .	Alive and well		
	April.	K. H., 47, m. . .	. . . . .	. . . . .	Cystosarcoma.
36	May.	M. S., 54, m. . . .	. . . . .	Died June, 1901; internal metastases.	Diabetis for many years.
37	June.	A. L., 70, m. . . .	Alive and well		
38	July.	R. G., 59, m. . . .	. . . . .	Died Feb. 1901; regional recurrence.	Far advanced case.
39	October.	B. E., 43, m. . . .	Alive and well		
40	October.	M. T., 57, m. . . .	Alive	. . . . .	Regional recurrence and metastases found on examination March, 1905, said to have appeared within last three months.
41	October	J. H., 43, m. . . .	. . . . .	Died Nov. 1901; internal metastases.	Two years previous, fibroadenoma diagnosticated, advice to remain under strict ob-ervation not heeded; re-examination in October 1901, pro ounced carcinoma.
42	December. . . .	L. L., 45, m. . . .	Alive and well. Con'f. No. 25	. . . . .	Extirpation of left breast now; extirpation of right breast preceding year, March 1899.
	1901, July	H. S., 49, m. . . .	. . . . .	Died April, 1902; hematemesis from cancer of stomach.	Death 2 days after radical operation for cancer of second breast; done 9 mos. later. (See unnumbered case following 47). First amputated 9 months previously, July 1901.
43	November . . .	M. N., 40, m. . . .	. . . . .	Died June, 1902, internal metastases.	Nine months previously extirpation of breast by another surgeon, without removing glands; soon after, the latter appear simultaneously in axilla and above clavicle. They are extirpated together with the pectoralis muscles.
44	December. . . .	D. M., 59, m. . . .	. . . . .	Died Nov. 1902; local recurrence and internal metastases.	Far advanced case; patient weighed 380 lbs.
45	December. . . .	A. L., 58, m. . . .	Alive and well		
46	December. . . .	P. R., 34, m. . . .	. . . . .	Died April, 1903; internal metastases.	Four married sisters in various parts of the country, had died of cancer of the brea t.
47	1902, April. . . .	R. H., 54, m. . . .	. . . . .	Died Feb. 1903; regional recurrence.	Radical operation plus extirpation of supraclavicular glands; far advanced case.
	April	H. S., 50, m. . . .	. . . . .	Died two days after operation on second breast, of hematemesis from cancer of stomach.	Nine months before operation for cancer of other breast. (See case 42).
48	July.	S. B., 42, m. . . .	Alive and well		
49	October	S. L., 31, m. . . .	. . . . .	Died Jan. 1904; internal metastases.	
50	October	E. V., 42, m. . . .	Alive and well		
51	November. . . .	J. F., 35, m. . . .	Alive	. . . . .	Two suspicious glands posterior to sternocleido muscle, stationary for last eighteen months.
52	November. . . .	M. E., 64, m. . .	Alive and well	Died Dec. 1903; internal metastases.	
53	November. . . .	L. C., 47, m. . . .	. . . . .	Died June, 1903, internal metastases.	Removal of supraclavicular glands December, 1902.
54	1903, January. . .	A. L., 42, m. . . .	. . . . .		Ten years before, in 1893, extirpation of adenofibroma of same breast; 10 years later developed cancer on same side; Jan. 1903, radical operation; April 1903, laparotomy for double ovarian carcinoma; inoperable.
55	April.	B. S., 45, m. . . .	Alive and well		
56	June.	F. M., 43, m. . . .	Alive and well		
57	June.	T. B., 38, m. . . .	. . . . .	Died March, 1904; local recurrence and internal metastases.	Sister of patient No. 46; far advanced case; rapidly growing tumor of enormous size; post-operative phlebitis of left femoral vein.
58	July.	B. W., 58, m. . . .	Alive and well	. . . . .	Many small infiltrated glands removed from around axillary and subclavian veins; prolonged *x*-ray treatment.
59	July.	W. H., 45, m, male.	Alive and well		
60	August.	P. G., 49, m. . . .	Alive and well		
61	October.	J. S., 58, m. . . .	Alive	. . . . .	March 1905, infiltration of supraclavicular glands found disease far advanced at time of operation.

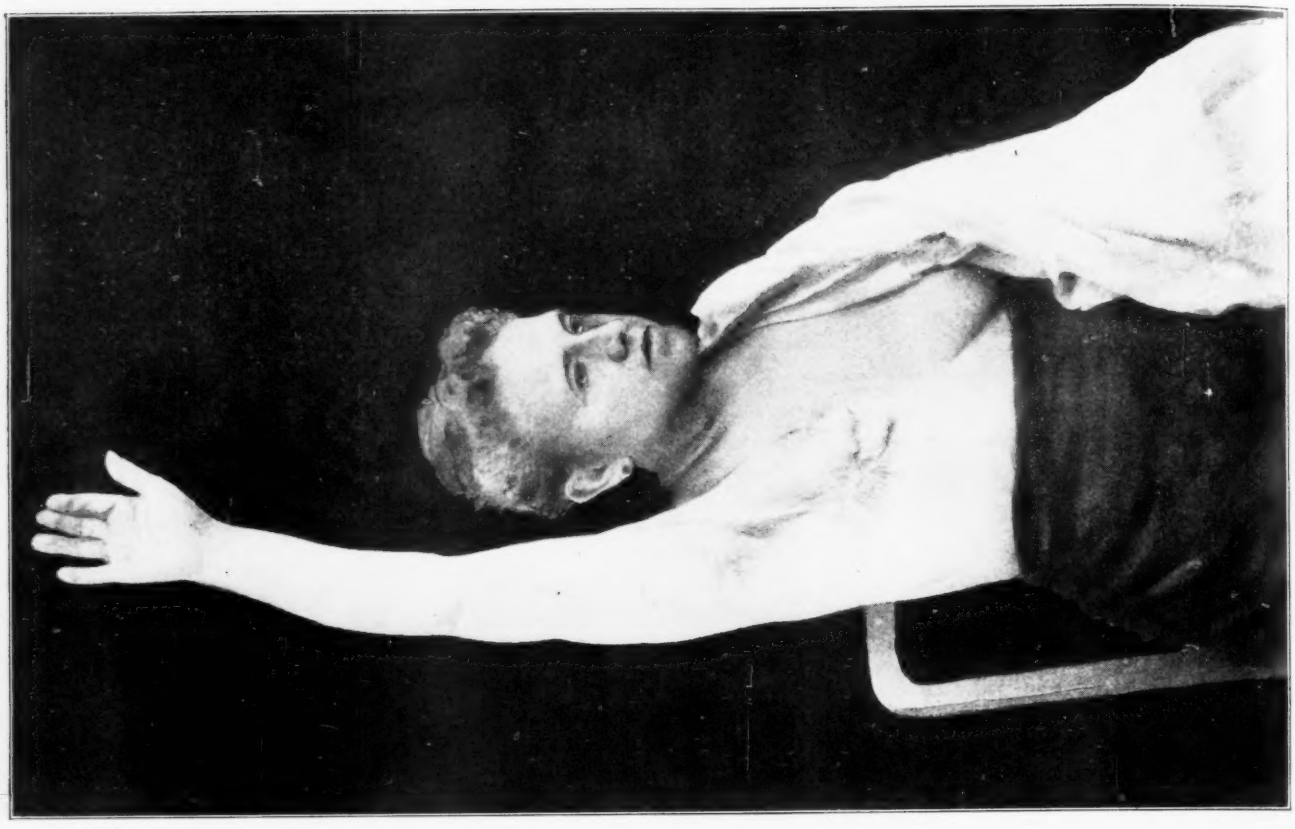

Fig. 15.—Showing posture of Statue of Liberty.

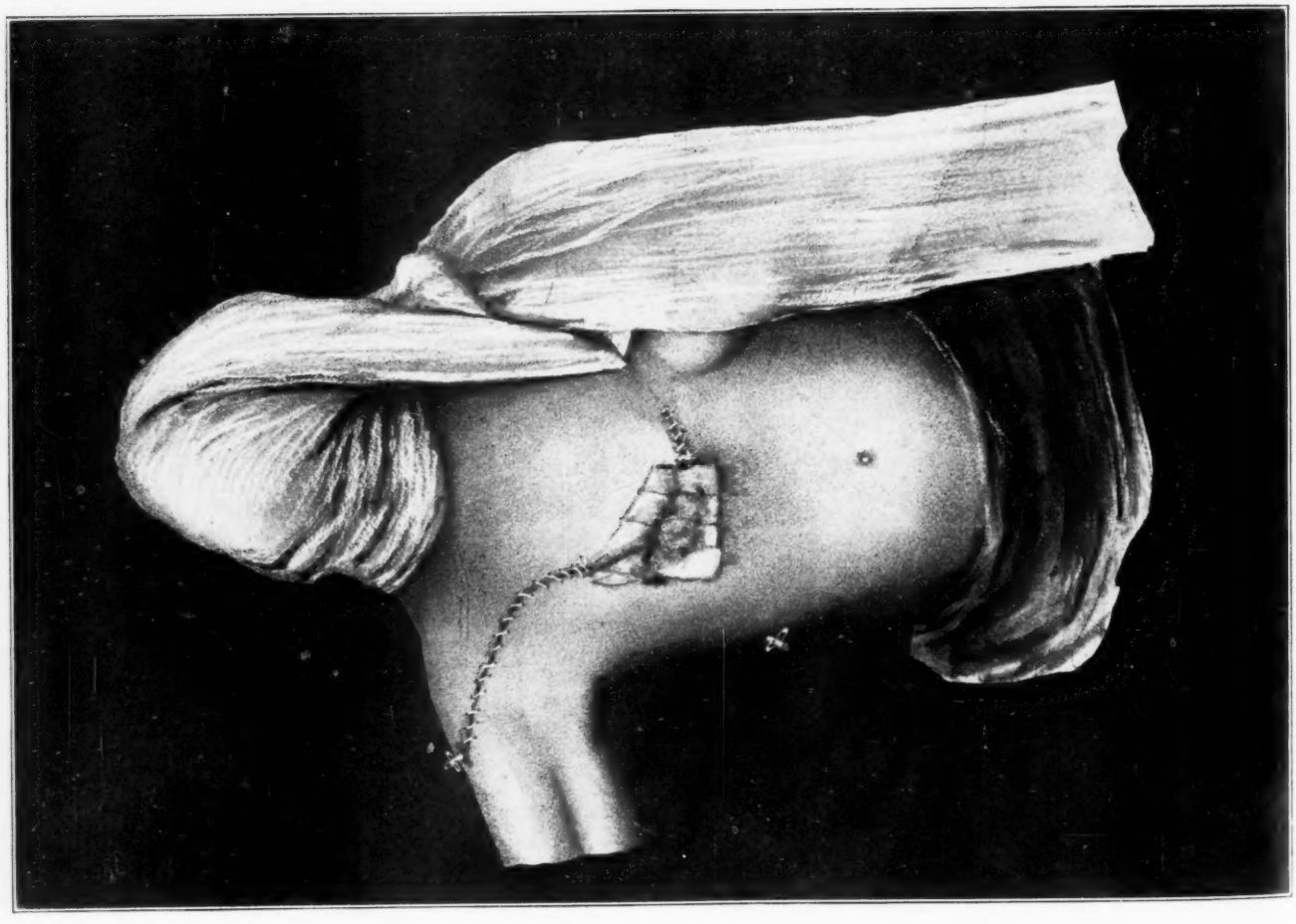

Fig. 14.—Operation completed with skin grafts in place, the latter overlapping defect borders for a short distance.

TABLE OF RADICAL OPERATIONS FOR CARCINOMA OF THE BREAST. (Continued.)

No.	Date of Operation.	Name and age. Married or Single.	Result.[16] Alive, Present Condition.	Died. Cause of Death.	Remarks.
62	December. . . .	M. A. L., 54, s.	. . . . .	Died Jan. 1905; internal metastases.	Far advanced at time of operation; tumor had grown through both pectoralis muscles.
63	December. . . .	N. E., 44, m....	Alive	. . . . .	Internal metastases found in March, 1905.
64	December. . . .	I. W., 45, m....	Alive and well		
65	1904, January....	J. K., 38, m....	. . . . .	Died Aug. 1904; internal metastases.	Death occurred 2 weeks after extirpation of opposite breast for carcinoma, done by another surgeon.
66	January	A. N., 28, s.....	Alive and well	. . . . .	Clinically appeared fibroadenoma, small piece excised proved carcinoma on microscopic examination; radical operation done 2 days later.
67	March	R. H., 48, s.....	Alive and well	. . . . .	First amputation of breast for seeming adenofibroma; microscopic examination revealed undoubted beginning carcinoma in center; radical operation promptly added.
68	April	O. B., 54, m....	Alive	. . . . .	Regional recurrence in March, 1905; also metastases in opposite breast.
69	June	J. B., 69, m....	Alive and well		
70	September....	F. K., 48, m....	Alive and well		

16. In the nomenclature "local and regional recurrence" I have followed Halsted's interpretation (Annals of Surg. 1894, p. 497): Local recurrence is a return of the disease in the field of operation, in the apparent or buried scar, viz., a return of the disease in any part of the explored regions. Regional recurrence designates skin metastasis at a greater or less distance from the scar.

17. The four unnumbered cases in this table represent two sarcomata and two in which the disease had recurred in the opposite breast. Of course, the latter are counted once only in giving the number of patients operated on; they are enumerated, however, in order to show the number of times the operation was performed by me.

ber are alive and well to-day 7, or 23.3 per cent.,[18] viz.:

Case No. 1, 1 well 10 years after operation.
Case No. 2, 1 well 9 years after operation.
Case No. 6, 1 well 8 years after operation.
Case No. 19, 1 well 7 years after operation.
Case No. 21, 1 well 6 years after operation.
Cases Nos. 25, 30, 2 well 5 years after operation.

An eighth (Case No. 17), who was operated on eight years ago, has developed a regional recurrence.

Twelve patients were operated on from three to five years ago, i. e., between September, 1899 and September, 1901. Of these, four, or 33.3 per cent., are alive and well to-day, from four to five years after operation, viz., Cases 25, 35, 37, 39.

In Case 25, the patient was operated on by me for cancer of the right breast in March, 1899. In December 1900, she returned to me with a cancer of the left breast, which I then also extirpated by the same method. She has been well and free from recurrence since—surely, an exceptional case.

A fifth patient, operated on in October, 1900, and who never presented herself for re-examination until March 1905, showed a local recurrence as well as a metastatic tumor in the skull which, she claims, developed in the course of the last few months.

From the above figures it appears that of 42 patients operated on 11 (12 operations), or 26.1 per cent., have remained free from recurrence from four to ten years after operation.

Of 28 patients operated on during the last three years, i. e., from September 1901 to September 1904, 14 are alive and well to-day, viz., Nos. 45, 48, 50, 52, 55, 56, 58, 59, 60, 64, 66, 67, 69, 70.

Of these, two were operated on from September 1901 to September 1902; seven from September 1902 to September 1903; the remaining five within the last year.

Four other patients operated on since September 1901, though alive to-day, have developed recurrences, One (51) has two small stationary glands posterior to the middle of the sternocleido mastoid muscle of the same side. Operation, November, 1902.[19] A second patient (61), operated on in October, 1903, has developed supraclavicular glands on the same side; the third (63), operated on in December, 1903, shows metastasis of the spinal column; the fourth (68), operated on in April, 1904, who had carried her scirrhus for more than two years before operation and failed to undergo *x*-ray after treatment, has a local recurrence.

Thus, of the entire 67 patients traced, 24, or 35.8 per cent., are alive and well to-day; 6 others, or 8.9 per per cent., though living, have developed either local, regional or metastatic recurrent growths. Thirty-five, or 52.3 per cent., have since died of the disease, viz., 4, or 5.97 per cent., of regional recurrence; the same number (4) of local recurrence plus metastases, and 27, or 40.3 per cent., of metastases.

Two other patients have died from causes not connected with the disease, i. e., one (Case 7), of diabetic coma, and one (Case 4), after being well and free from recurrence for nearly 7 years, succumbed to endocarditis (coroner's case).

Reviewing my ten years' experience with this method, I am convinced that final results could be further improved only, if we could get patients to come earlier for operation. The important task before us, therefore, is that of educating the public. Patients must be taught to lose their fear of "a surely resulting stiffness of the arm and sure recurrence"; they must be shown the absurdity of carrying a tumor, often for years, without consulting a physician, sometimes hiding its presence even from their nearest of kin.

In view of the excellent results that can be obtained by radical operation—functional as well as otherwise—physicians, too, should advise early operation not only in the plainly recognizable cases, but also in the doubtful ones, rather than keep such patients under observation until the disease has become manifest beyond question, and, perhaps, developed to a stage where it is beyond surgical reach.

18. Another patient (No. 4) was well and free from recurrence for nearly seven years, when she died of endocarditis (coroner's report).

19. See under special observations.

Emphysema.—Potter recommends terebene in chronic emphysema. Wood states that the grindelia is of great service when there is accompanying cough. Brunton gives a single large dose of chloral in the sudden, acute form; small doses for long-continued dyspnea. For asthmatic cases Shoemaker prescribes tinct. euphorb. piluli 1 part, fld. ext. quebracho 7 parts, and gives one-half to two teaspoonfuls in water every three or four hours.—*Denver Med. Times.*

borders for a short distance.

TETANUS.

A PRELIMINARY REPORT OF A STATISTICAL STUDY.*

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The object of these studies has been to demonstrate the incidence of tetanus in the United States and to present a brief review of all collectable cases, with a view to establishing our knowledge of the disease as it occurs in this country, as well as to adduce measures of prophylaxis and treatment.

A study of the literature from 1850 to 1904, covering the reports of cases found in the "Index-Catalogue of the Library of the Surgeon-General" in Washington from 1850 to 1892, and the "Index Medicus" from 1892 to 1904, inclusive, or 949 cases, with a report of 252 original ones collected by us from direct correspondence with hundreds of observers all over the country, giving a total of 1,201 cases, affords convincing proof that every case of the disease is the result of the introduction of the tetanus bacillus through a lesion of the skin, however minute it may be, and that so-called idiopathic or "rheumatic" tetanus does not exist. From our statistics the fact stands clearly forward that the disease is endemic to all large centers of population; that in some localities in which it formerly prevailed with marked severity, notably in Long Island, it has decreased in prevalence; that occasionally there are small epidemics that prevail, which can be definitely traced in their origin, as for instance in hospitals following the use of infected catgut sutures. The same is true of vaccination tetanus and diphtheria tetanus following the use of tetanized vaccine or antitoxin, and tetanus neonatorum (e. g., where cases have developed in the service of the same midwife).

Table 1 indicates many of the leading points concerning the cases collected by us from individual physicians throughout the United States and in subsequent tables aspects will be elaborated separately in detail.

DISTRIBUTION AND PREVALENCE IN THE UNITED STATES.

The sections of this country in which tetanus is most frequent are northern New York, along the Hudson Valley, Brooklyn and the surrounding districts of Long Island, southern Pennsylvania, Virginia, Georgia (at least about Savannah), southern Louisiana, Indiana, Illinois and southern California. Cases of tetanus were plentiful after the battle of Gettysburg and also after the battle of the Wilderness.

In 1,099 cases out of the total of 1,201 collected by us, the location by state was given (Table 2) with Pennsylvania leading, showing 224 cases, while New York stood next, with 190 cases. These figures, however, are misleading as regards the prevalence of the disease owing to the incompleteness of the returns from many quarters, and we refer the reader to the tabulated reports, copied from the census statistics of the United States, accompanying this study. Thus, while we noted but 17 cases from Louisiana, the census report for 1870 and 1890 shows a total of 806 cases, of which 642 were instances of tetanus neonatorum, in this one state alone.

A perusal of Table 3 can not help but impress every reader with the appalling mortality from tetanus of the newborn and herein, indeed, lies a great work in a concentrated endeavor to lessen the fearful ravages of the condition in the newborn.

It is interesting to note that the total number of cases for all the states mentioned in the table for 1870 was 1,627, and the total number of cases for 1900 was 2,259, indicating that while Fourth of July tetanus is vastly on the increase, in general the disease has been on the decrease as compared with the population.

There is a strip of land extending from the village of Oceanic New Jersey on the east, to the west of Red Bank on the west, the said strip being about one mile wide and five miles long, where tetanus is strongly endemic.[1] It is a well-known fact that on the eastern end of Long Island where formerly the disease was prevalent, it is now rare.[2]

The incidence of the disease is more or less influenced by the different seasons of the year, as may be seen from a glance at the subjoined table, which embraces 687 cases in which the seasonal occurrence was recorded.

An analysis of Table 4 shows the following numerical order: July, with 129 cases; October, with 75; September, with 68; June, 61; August, 59. Fourth of July celebration explains the great increase in July cases, but independently of this fact, the statement holds true that tetanus is more prevalent in the hotter as compared with the colder months of the year.

The age of the patient was given in 583 cases, as shown in Table 5.

It will be observed that the greatest number of cases tabulated with reference to the age developed as follows: Between 10 and 15 years there were 130 cases; from 5 to 10 years there were 99. From the 5th to the 15th years of life, therefore, 229 cases occurred, or 39.3 per cent. Between the ages of 15 and 25 there were 145 cases, or 24.9 per cent., while between those of 25 and 35, there were 86 cases, or 14.8 per cent. Beyond 50 years we found only 14 cases. In 981 of the cases the sex of the patient was noted, with the following result: Males, 778; females, 203, the former sex making up 79.3 per cent.

BACTERIOLOGY AND INFECTION ATRIA.

Nicolaier's bacillus is the causal factor in every case, although not always detected; it is easily stained. The germ occurs as a common saprophytic organism in most garden earths, in dust, manure, the intestines, and discharges of animals.

The recent literature as well as our own investigations show that the discovery of the tetanus bacillus in the wounds and also in the earth where infection was known to occur, is a more common event than formerly. Dr. Lefevre of Pittsburg, in a personal letter, referred to three cases in all of which the bacillus of Nicolaier was isolated from the pus found in the wounds. This observer mentions a fourth case, a child, which had fallen from a tree, sustaining a compound fracture of the arm with subsequent development of tetanus. Bacteriologic cultures of the earth from the spot on which the child fell showed the presence of the specific microorganism of this disease.

A non-pathogenic anaërobic organism which resembles the tetanus bacillus has been described, but the latter does not prove pathogenic when injected into the susceptible animals.[3] The germ rarely gains entrance into the alimentary tract by ingestion of food. The usual

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, Portland, Ore., July, 1905.

1. Dr. J. W. Bennett, Long Branch, N. J., in personal letter.
2. Osler, Text-book, Practice of Medicine.
3. Journal of Boston Society of Medical Science, 1901, p. 506.

TABLE I.

Case No.	Name of Reporter.	Year.	Month.	Sex.	Race.	Age.	Infection Atrium.	Incubation Days.	Duration. Days.	Mortality.	Serum Treatment.	Local and General Treatment.
1	Dr. J. M. Mason, Birmingham, Ala. . .	1903	Oct.	M	W	24	Nail in toe	100	17	0	. . . . .	Local antisepsis carbolic acid hypo.
2	Dr. L. W. Johnstone, Tuskegee, Ala. . .	1904	April	M	W	5	Splinter in foot . . .	6	3	1	Yes, amount not stated.	Chloral and bromids.
3	Dr. F. G. Du Bose, Selma, Ala	1898	May	M	C	45	Chronic leg ulcer. . .	. . . .	14	1	4 tubes P. D. & Co. in 48 hrs.	Chloral and bromids.
4	" " " " " "	1900	June	M	W	8	Foot wound.	4	3	1	. . . . .	Chloral and bromids morphin hyoscin, antiseptics.
5	" " " " " "	1901	May	F	C	27	Unknown	. . . .	14	1	. . . . .	Hyoscin, chloral and bromid morphin antiseptics.
6	" " " " " "	1902	June	M	C	.....	Head wound	10	28	0	. . . . .	Carbolic acid local ichthyol sedatives.
7	" " " " " "	1902	June	M	C	50	Foot wound	12	14	1	. . . . .	Carbolic acid hypodermically.
8	Dr. J. L. Burns, Jonesboro, Ark.	1901	Sept.	F	W	10	Fracture forearm. . .	5	30 hrs.	1	. . . . .	Amputation for septic embolism.
9	Dr. M. S. Dibrell, Van Buren, Ark. . .	1890	.....	M	W	10	Nail in foot.	7	7 days	1	. . . . .	Excision, sedative carbolic locally.
10	Dr. A. A. Stafford, Alameda, Cal	1904	Jan.	M	W	14	Firecracker on hand. .	10	2	1	50 cc.	Carbolic locally, sedative.
11	Dr. W. M. Lewis, Los Angeles, Cal . . .	. . .	. . . .	F	C	40	Uterus.	8	4	1	. . . . .	Douches sedative.
12	Dr. D. C. Barber, Los Angeles, Cal . .	See	notes	bel	ow	on 10	cases.					
13	Dr. C. Van Zualwenburg, Riverside, Cal.	1902	May	M	W	32	Abrased heel from shoe.	14	3	1	10 cc. every 3 hours,	Incision, chloral and bromids, carbolic locally.
14	Dr. W. A. Briggs, Sacramento Cal . . .	1903	.....	M	W	27	Face wound healed. .	. . . .	21	0	50 cc	20 mimims carbolic acid hypodermically daily.
15	" " " " " . . .	.....	.....	F	C	18	Tooth extraction. . .	. . . .	10	0	. . . . .	Chloral and bromids.
16	Dr. Fred Baker, San Diego, Cal.	1886	.....	M	W	30	Axe wound of foot . .	5	4	1	. . . . .	Toe amputated, antiseptic.
17	" " " " "	1892	.....	M	W	50	Herniotomy.	7	5	1	. . . . .	Antiseptic.
18	" " " " "	1904	.....	M	W	60	Axe wound of foot . .	14	30	0	Amount not stated.	Antiseptic.
19	Dr. W. F. McNutt, Jr., San Francisco Cal.	1904	.....	M	W	17	Dental operation on tooth.	4	10	1	Used but not stated.	Chloral and bromids, morphin hyoscin.
20	Dr. W. F. McNutt, Jr., San Francisco Cal.	1904	.....	M	W	22	. . . . .	5	. . . .	0	Used but not stated.	Chloral and bromids, morphin hyoscin.
21	Dr. W. F. McNutt, Jr., San Francisco Cal.	1904	.....	M	W	34	. . . . .	7	21	0	Used but not stated.	Chloral and bromids, morphin hyoscin.
22	Dr. Geo. Goodfellow, San Francisco, Cal.	1892	.....	M	W	36	Hypodermic needle in arm.	7	14	1	. . . . .	Sedative.
23	Dr. Dudley Tait, San Francisco, Cal . .	1900	.....	M	W	25	Hand	5	7	1	Intracerebral and intravenous.	Carbolic acid locally.
24	" " " " " " . .	1901	.....	M	W	35	Arm	12	19	0	Intravenous and intracerebral.	Chloral.
25	Dr J. Barbat, San Francisco, Cal	1905	Feb.	M	W	12	Sole of foot	10	5	1	150 cc.	Bichlorid locally chloral and bromids.
26	Dr. J. M. Perkins, Dr. C. G. Hickey } Denver, Colo.	1903	July	M	W	14	Leg	10	2	1	Intracerebral amount not stated.	Incision iodoform dressing.
27	Dr. W. T. H. Baker, Dr. R. W. Corwin } Pueblo, Colo. . . .	1900	Jan.	M	C	20	. . . . .	8	2	1	None	Chloral bromid chloroform.
28	Dr. W. T. H. Baker, Dr. R. W. Corwin } Pueblo, Colo . . .	1900	April	M	W	18	. . . . .	10	4	1	Intracerebral 40 cc. . .	Chloral bromid choloform.
29	Dr. W. T. H. Baker, Dr. R. W. Corwin } Pueblo, Colo. . . .	1902	June	M	W	36	. . . . .	11	7	1	Subcutaneously 60 cc.	Chloral bromid chloroform.
30	Dr. J. F. Roe, Salida, Colo.	1902	April	F	W	21	Catgut in appendicectomy.	15	0	0	. . . . .	Carbolic acid 5 per cent. hypodermic.
31	Dr. N. E. Wordin, Bridgeport, Conn . .	. . .	. . .	F	W	48	. . . . .	. . . .	. . . .	1		Trephined curare.
32	" " " " " " . . .	. . .	. . .	M	W	28	. . . . .	. . . .	. . . .	0	. . . . .	Trephined.
33	Dr. F. Burnell, South Norwalk, Conn. .	1903	July	M	W	17	Toy pistol wound. . .	8	6	1	. . . . .	Carbolic locally, chloral and bromids.
34	" " " " " " . .	1903	July	M	W	19	Toy pistol wound . .	10	21	0	. . . . .	Carbolic locally, chloral and bromids.
35	Dr. L. I. Pons, Roxbury, Conn.	1904	.....	F	W	16	Abscess from splinter.	6	21	1	. . . . .	Chloral and bromids, passion flowers.
36	Dr. R. B. Hopkins, Milton, Del	.....	.....	M	W	12	Toe crushed by horse.	7	5	1	. . . . .	Turpentine bichlorid.
37	" " " " "	..	....	M	W	30	Machine hand crushed.	7	7	1	. . . . .	Peroxid.
38	" " " " "	.....	.....	M	W	70	Finger tip crushed by wagon.	9	9	1	Amount not stated.	Antiseptic.
39	Dr. W. F. Haines, Seaford, Del	1895	.....	M	C	28	Hand injury	7	5	1	. . . . .	Amputation.
40	Dr. H. C. Lawton, Norwich, Conn. . . .	1905	March	M	W	5	Puncture of great toe.	12	31	0	10 cc. every 4 hours.	Chloral and bromids, antiseptic.
41	Dr. T. L. Jefferson, W. Palm Beach, Fla.	1903	Sept.	M	C	37	Nail in foot	7	1	1	10 cc.	Carbolic acid locally, chloral and bromids.
42	Dr. W. W. Stewart, Columbus, Ga. . . .	.....	July	M	W	16	Firecracker on hand. .	2	12	0	Daily injection amount not stated.	Chloral and bromids and morphin.
43	" " " " "	. . . .	. . . .	F	W	28	Injury to scar of kidney operation.	1	4	1	Daily injection amount not stated.	Chloral and bromids and morphin.
44	Dr. W. D. Travis, Covington, Ga.	. . . .	. . . .	M	C	40	Nail wound of foot. .	8	6	1	. . . . .	Antiseptic chloral and bromids.

TABLE I—(CONTINUED.)

Case No.	Name of Reporter.	Year.	Month.	Sex.	Race.	Age.	Infection Atrium.	Incubation-Days.	Duration.—Days.	Mortality.	Serum Treatment.	Local and General Treatment.
45	W. D. Travis, Covington, Ga	..	..	M	C	17	Nail wound of foot. .	9	10	1	. . . . .	Antiseptic chloral and bromids.
46	J. G. Jarrell, Savannah, Ga	1904	Jan.	M	W	25	Gunshot wound thigh.	18	7	0	. . . . .	Antiseptic chloral and bromids.
47	J. A. Crowthers, Savannah, Ga	..	..	..	..	..	..	..	..	1	Intracerebral injection.	
48	Dr. M. F. Dunn / Dr. J. G. Jarrell } Savannah, Ga	1894	..	M	W	30	Comp. dislocation of wrist.	7	10	1	. . . . .	Antiseptic chloral and bromids.
49	Dr. J. G. Jarrell, Savannah, Ga	1896	..	M	C	19	Lath nail in foot. . .	12	10	1	. . . . .	Antiseptic chloral and bromids.
50	" " " " " "	1893	..	M	C	20	Nail in great toe . . .	10	7	1	. . . . .	Antiseptic chloral and bromids.
51	Dr. E. H. Griswold, Peru, Ind.	1903	June	M	Ind	5	Nail in foot	5	5	1	. . . . .	Carbolic acid hypo.
52	" " " " " "	1903	June	M	W	12	Car injury to foot. . .	7	10	1	. . . . .	Carbolic acid hypo.
53	" " " " " "	1904	June	M	W	30	Pistol shot in hand.	10	6	1	. . . . .	Carbolic acid hypo.
54	Dr. Etta Charles, Summitville, Ind	1905	May	F	W	.....	Wound on leg.	7	4	1	20 cc. every 4 to six hours.	Chloral and bromids.
55	Dr. C. M. Eisenbeiss, Elkhart, Ind.	1902	Nov.	M	W	20	Index finger.	21	30	0	Large amt. but not stated.	Antiseptic.
56	Dr. W. E. Scott, Adel, Iowa	..	..	M	W	13	Foot	21	28	0	. . . . .	Chloral and bromids.
57	Dr. M. J. Kenepick, Algona, Iowa	1895	..	M	W	7	Comp. fract. ulna and radius in runaway.	..	5	1	. . . . .	Chloral and Bromids.
58	Dr. H. G. Ristin, Ft. Dodge, Iowa.	1900	Feb.	M	W	35	Wound of thumb joint.	19	12	0	. . . . .	10% carb. solutien by mouth in lrg. doses.
59	Dr. C. H. Churchill, Ft. Dodge, Iowa.	1901	Oct.	M	W	45	Finger wound.	7	5	1	. . . . .	Large doses of carb. acid hypo.
60	Dr. J. H. McGready, Independence, Ia.	1902	June	M	W	40	Gunshot wound, foot.	5	2	1	50 cc.	Antiseptic.
61	Dr. W. G. Mullarky, Cedar Falls, Iowa.	1902	April	F	W	18	Nail in foot.	4	10	1	Large amount.	Excision. sedative.
62	Dr. A. L. Wright, Carroll, Iowa	..	..	M	W	12	Foot wound.	4	3	1	. . . . .	Chloral and bromids.
63	" " " " " "	..	..	M	W	50	Foot wound.	5	2	1	. . . . .	Chloral and bromids.
64	" " " " " "	..	..	F	W	18	Foot wound.	5	3	1	. . . . .	Chloral and bromids.
65	" " " " " "	..	..	F	W	35	Unknown.	..	4	1	. . . . .	Chloral and bromids.
66	Dr. T. J. Maxwell, Keokuk, Iowa	..	..	M	W	9	Crushed foot	9	21	0	60 cc.	Heroin.
67	Dr. F. H. Boucher, Marshalltown, Ia.	1887	June	F	W	4	Knife wound.	2	3	1	. . . . .	Chloral and bromids.
68	" " " " " "	1887	June	F	W	10	Axe wound	5	7	1	. . . . .	Chloral and bromids.
69	" " " " " "	1892	Oct.	M	W	35	Puncture from safety pin.	7	42	0	. . . . .	Chloral and bromids.
70	Dr. T. M. Throckmorton, / Dr. A. L. Yocum, } Chariton, Ia.	1890	..	M	W	35	Scalp wound in runaway.	5	3	1	. . . . .	Chloral and bromids.
71	Dr. J. H. Sams. Clarion, Ia.	1894	July	M	W	5	Chicken bone in heel.	7	3	1	. . . . .	Chloral and bromids.
72	" " " " " "	1904	Mar.	F	W	8	Wound in finger in barn.	14	28	0	16 drams serum in all.	Chloral and Bromids.
73	Dr. S. L. Ensminger, Crawf'dsville, Ind.	1879	..	M	W	22	Hand	7	6	1	. . . . .	Poultices, antiseptics and calabar bean.
74	" " " " " "	1884	..	F	W	16	Leg	2	14	0	. . . . .	
75	" " " " " "	1898	..	F	W	30	Arm	4	4	1	. . . . .	
76	Dr. B. H. Breakstone, Chicago, Ill.	1901	..	M	W	9	Thigh wound	3	4	1	. . . . .	Chloral and bromids.
77	" " " " " "	1901	..	M	W	9	Scalp wound	5	8	1	Small amount.	Chloral and bromids.
78	" " " " " "	1901	..	M	W	8	Finger wound.	4	5	1	. . . . .	Chloral and bromids.
79	" " " " " "	1900	..	M	W	11	Ingrown toenail. . . .	4	12	1	. . . . .	Chloral and bromids.
80	" " " " " "	1902	..	M	W	42	Hand wound	3	9	1	Small amount.	Chloral and bromids.
81	Dr. G. M. French, Danville, Ill	1905	Mar.	F	W	31	Blank cartridge wound.	5	30 hrs.	1	. . . . .	Chloral and bromids.
82	Dr. H. W. Morehouse, Danville, Ill	1904	Oct.	M	W	15	Gunshot wound of leg.	12	6	1	30 cc. ev. 3 hrs.	Bichl. locally.
83	Dr. C. Chenowett, Decatur, Ill.	1905	Mar.	M	W	25	Nail in foot.	6	9	1	50 cc.	Chloral and bromids.
84	Dr. I. A. Shirley, Winchester, Ky	1903	May	M	W	6	Splinter wound of foot.	10	..	0	Large amount.	Tonics chlo. and bromids.
85	Dr. I. A. Shirley, / Dr. T. H. McKinley, } Winchester, Ky.	..	..	M	W	10	Knee joint	30 hrs.	..	0	10 cc. serum early.	Chloral and bromids.
86	Dr. J. H. Letcher, Henderson, Ky.	1902	Dec.	M	W	9	Arm comp. fract. . .	9	6	1	15 cc. late . . .	Amputation. chloral.
87	" " " " " "	1903	..	..	..	5 dys.	Navel.	..	..	1	. . . . .	Sedative.
88	" " " " " "	1902	..	..	..	5 dys.	Navel	..	..	1	. . . . .	Sedative.
89	Dr. Arch Dixon, Henderson, Ky	1880	..	M	W	7	Hand	1	14	1	. . . . .	Amputation, antiseptics.
90	" " " " " "	1883	..	M	W	18	Foot.	28	14	1	. . . . .	
91	" " " " " "	1888	..	M	W	30	Foot.	5	14	1	. . . . .	
92	" " " " " "	1898	..	M	W	24	Foot.	7	14	1	. . . . .	
93	" " " " " "	1899	..	M	W	35	Wrist.	9	14	1	. . . . .	
94	" " " " " "	1901	..	F	C	46	Wrist.	6	14	1	. . . . .	
95	Dr. G. R. Tolson, Covington, La.	..	Nov.	M	W	40	Foot.	4	6	1	. . . . .	
96	Dr. F. W. Parham, New Orleans, La.	1905	Mar.	M	W	27	Forehead.	6	5	1	. . . . .	
97	" " " " " "	1901	..	M	W	11	Wound of leg and thigh.	9	..	0	10 cc.	
98	Dr. F. C. Dixon, Lewiston, Me.	1901	..	M	W	10	Nail in foot.	..	..	0	Freely used. .	Chloral and bromids.
99	Dr. H. H. Brock, Portland, Me	1904	Nov.	F	W	20	After appendectomy. .	7	9	1	33 cc. ev. 12 hrs.	Chloral and bromids.
100	Dr. W. V. Hanscom, Portland, Me.	1895	..	M	W	7	Compound fracture. . .	7	4	1	. . . . .	Chloral and brom., Cannabis Indica.
101	" " " " " "	1898	..	M	W	9	Unknown	..	4	1	. . . . .	
102	Dr. T. J. Daly, Lawrence Mass	1903	Aug.	M	W	18	Gunshot—hand. . . .	25	42	0	Large amount	Carbolic acid locally.
103	W. E. Webber, Lewiston, Me	1904	Mar.	F	W	32	After ovariotomy. . .	7	4	1	Large amount.	Chloral and bromids.
104	Dr. C. F. Davidson, Easton, Md.	1904	July	M	W	12	Poison oak on face. . .	9	65 hrs.	0	300 cc.	
105	Dr. F. B. Smith, Frederick, Md	1893	..	M	W	50	Bruised finger	14	42	0	. . . . .	Chloral and bromids.
106	" " " " " "	1894	..	M	W	10	Lacerated leg.	4	10	1	. . . . .	Chloral and bromids.
107	" " " " " "	1899	..	M	W	25	Bruised finger	7	21	1	. . . . .	Chloral and bromids.
108	" " " " " "	1904	..	M	W	30	Gunshot wnd—hand. .	10	21	0	Large doses. . .	Calabar bean.
109	Dr. B. W. Goldsborough, Cambridge, Md.	1898	..	F	W	10	Wound.		8	0	. . . . .	Chloral and bromids, chloroform hyoscin.
110	" " " " " "	1898	..	F	C	8	. . . . .		10	1	. . . . .	
111	" " " " " "	1900	..	M	W	12	. . . . .		25	0	Large doses. .	
112	" " " " " "	1901	..	M	C	17	. . . . .		7	1	Large doses. .	
113	" " " " " "	1904	..	M	W	25	. . . . .	8	21	0	Large doses. .	
114	Dr. J. C. Hickerson, Independence, Mo.	1903	July	M	W	14	Pistol wound, finger .	10	4	1	4 tubes PD&C.	
115	Dr. C. B. Clapp, Moberly, Mo	1893	July	M	W	33	Gunshot, leg	9	7	1	. . . . .	C. and B. local heat and blister to spine and neck.
116	" " " " " "	1900	Nov.	M	W	19	Dog bite, leg.	10	10	1	Large doses. .	
117	" " " " " "	1902	Sept.	M	W	17	Comp. fracture, arm.	12	14	1	. . . . .	
118	Dr. J. R. Williams, White Pigeon, Mich.	1886	..	M	W	15	. . . . .	7	5	1	. . . . .	Blister spine, Chloral and bromids, gelsemium, calabar bean.
119	" " " " " "	1890	..	F	W	15	. . . . .	10	12	0	. . . . .	
120	" " " " " "	1903	..	M	W	30	. . . . .	7	6	1	Amt. not sta'd	
121	" " " " " "	1901	..	M	W	30	. . . . .	8	8	0	. . . . .	
122	" " " " " "	1905	May	M	W	28	. . . . .	5	4	1	Amt. not sta'd	
123	Dr. East, Constantine, Mich	1905	May	M	W	13	Nail in foot.	7	5	1	Amt. not sta'd	
124	Dr. Rush McNair, Kalamazoo, Mich	1899	Aug.	M	W	13	Splinter in toe	21	30	0	60 cc.	Warm sponge baths.
125	Dr. C. Van Zualwenburg,	1897	May	M	W	28 da.	Navel.	Unk'n.	14	0	. . . . .	Chloral and bromids.
126	" " " " " "	1892	..	M	W	5 da.	. . . . .	5?	2	1	. . . . .	Chloral and bromids.
127	Dr. C. B. Nancrede, Ann Arbor, Mich.	1898	Oct.	M	C	16	Nail in foot.	7	6	1	50 cc. Hypo. .	Chloral and bromids.
128	" " " " " "	1902	July	M	W	15	Firecracker in hand .	5	4	1	10 cc. Hypo. .	Carbolic locally.

TABLE 1—(CONTINUED.)

Case No.	Name of Reporter.	Year.	Month.	Sex.	Race.	Age.	Infection Atrium.	Incubation—Days.	Duration—Days.	Mortality.	Serum Treatment.	Local and General Treatment.
129	Dr. C. B. Nancrede, Ann Arbor, Mich....	1902	Sept	M	W	17	Hand....	11	41	0	Large amounts hypo.	Amputation of forearm. Carbolic.
130	" " " " " " "	1903	July	M	W	16	Blk. cartridge—hand.	8	1	1	.....	Amputation, chlo. and bro. and carbolic.
131	" " " " " " "	1905	...	M	W	19	Shotgun w'nd, left leg	10	21	0	20 c.c. in spinal canal.	Amputation, chloral and bromids.
132	Dr. C. D. Clawson, Montour Falls, N.Y..	...	...	M	W	25	Unknown.....	...	...	1	.....	Chloral and bromids.
133	Dr. W. H. Park, New York City.....	1903	...	M	W	10	Crushed finger....	12	20	0	30 c.c. intravenous, lrge. doses hypo.	Chloral and bromids, finger amputated.
134	Dr. S. Blume, Riverhead, L. I., N. Y....	1905	April	F	W	8	Unknown.....	6	15 hrs.	1	.....	
135	Dr. J. H. Benjamin, Riverhead, L.I., N.Y.	1900	...	M	C	5	Foot wound.....	...	5	1	.....	C. & B. and opium
136	" " " " " " " "	1880	...	M	W	30	Foot wound.....	...	6	1	.....	C. & B. and opium
137	Dr. H. D. Wey, Elmira, N. Y.....	1894	...	M	W	20	Comp. frac. forearm..	5	5	1	.....	C. & B, and chloroform.
138	Dr. M. Skidmore, E. Moriches, L. I....	1900	June	M	W	50	Incised wound—nose	2	7	1	.....	Warm baths, antispasmodic.
139	" " " " " " .	1895	...	M	W	30	Horse kick in face..	2	60	0	.....	2 qts. whisky every 24 hrs.; warm baths.
140	Dr. H. B. Besemer, Ithaca, N. Y.....	1896	...	F	W	18	Miscarriage.....	...	...	1	.....	Curettement.
141	" " " " " " "	1899	...	M	W	30	Operat'n, herniotomy.	5	6	1	.....	
142	" " " " " " "	1902	...	M	W	12	Splinter in foot....	5	8	1	Lrg. amt. hypo.	
143	" " " " " " "	1904	July	M	W	14	Pistol—hand.....	6	2	1	2 doses in brain, 2 doses hypo.	
144	Dr. P. S. Mallon, Morris Plains, N. Y....	1905	Jan.	M	C	38	Foot	...	10	1	.....	Opium.
145	Dr. Geo. Haslam, Fremont, Neb.....	1902	Mar.	M	W	21	Lacerated thigh....	7	2	1	.....	Carbolic hypo.
146	" " " " " "	1904	Sept.	M	W	60	Gunshot in chest....	7	3	1	Amt not stated..	
147	" " " " " "	1896	Dec.	M	W	19	Laceration index fing.	16	24	0	50 c.c. hypo....	Amputation.
148	Dr. W. T. Johnson, Pawnee City, Neb...	1903	Sept.	M	W	7	Knee	8	12	0	2000 units.....	Chloral and bromids, antiseptics.
149	" " " " " "	1904	Sept.	F	W	3	Foot	7	42	0	11,000 units....	
150	" " " " " "	1900	...	M	W	8	Foot.....	8	1	1	.....	
151	Dr. H. T. Bahnson, Winston Salem, N. C.	...	...	M	C	27	Cut finger.....	14	...	0	.....	Chloral and bromids.
152	" " " " " " "	...	...	M	C	23	Cut toe with hoe....	60	2	1	.....	Chloral and bromids.
153	" " " " " " "	...	...	M	W	15	Shotgun in hand....	7	3	1	.....	Chloral and bromids.
154	" " " " " " "	...	...	M	W	20	Shotgun in leg.....	10	2	1	.....	Chloral and bromids.
155	" " " " " " "	...	...	F	W	25	Orbit from cartridge.	10	7	0	.....	Free drainage of pus.
156	Dr. D. E. Stanton, High Point, N. C...	1893	...	M	W	6	Not stated	10	5	1	.....	
157	Dr. C. M. Strong, Charlotte, N.C	...	...	M	C	40	Comp. frac. tib. and fib.	10	4	1	Small amount...	
158	" " " " " " "	...	...	M	C	21	Kick on arm by horse.	21	5	1	.....	
159	" " " " " " "	...	...	M	C	12	Nail in foot.....	14	3	1	.....	
160	Dr. J. H. Gleason, Manchester, N. H...	1898	July	M	W	14	Firecracker in hand..	12	5	1	Amt. not stated hypo.	
	" " " " " " ..	1902	July	M	W	20	Firecracker in hand..	14	6	1	Amt. not stated, hypo.	
161	Dr. W. T. Smith, Hanover, N. H.....	1903	Sept.	M	W	39	Gunshot—forearm..	5	3½	1	60 c.c. hypo....	Amputation.
162	" " " " " "	1904	July	M	W	27	Comp. frac. forearm..	6	7	1	400 c.c.....	Amputation.
163	" " " " " "	1904	Oct.	M	W	12	Gunshot—thigh.....	7	2	1	120 c.c.....	Drainage.
164	Dr. C. R. Gould, Tilton, N. H	1886	Feb.	M	W	65	Sole of foot.....	5	2	1	.....	C. & B., opium, hot fomentation.
165	" " " " " "	...	...	M	W	50	Comp. frac. at elbow.	7	4	1	.....	
166	" " " " " "	...	...	F	W	14	Hay fork in foot....	2	3	1	.....	
167	Dr. F. A. Knich, Westfield, N. J.....	1880	Dec.	M	W	40	Frosted feet.....	...	7	1	.....	
168	" " " " " "	1885	April	M	W	45	.....	...	30	0	.....	
169	Dr. H. C. James, Mays Landing, N. J...	1903	July	F	W	11	Splinter in foot....	8	4	1	280 c.c....	
170	Dr. B. N. Hoagland, Woodbridge, N. J.	1904	Jan.	F	W	8	Splinter in foot....	5	4	1	20 c.c.....	Chloral and bromids.
171	Dr. R. C. Newton, Montclair, N. J....	1895	...	M	W	16	Scalp wound	7	7	1	.....	
172	" " " " " "	1898	...	F	W	60	Nasal mucous memb.	...	3	1	.....	Plug. for hemorrhage.
173	" " " " " "	1899	...	M	W	12	Toy pistol in hand..	4	7	1	.....	Amputation.
174	" " " " " "	1902	...	F	W	20	Finger.....	6	12	0	.....	
175	" " " " " "	...	...	F	W	25	Unknown.....	3	7	1	.....	
176	Dr. F. W. Flagge, Rockaway, N. J.....	1890	...	M	W	12	Rusty nail in foot..	7	6	1	.....	Chloral and bromids.
177	Dr. S. T. Day, Port Norris, N. J.....	1893	...	M	W	13	Heel of foot.....	10	20	0	.....	C. & B. gelsemium; carbolic locally.
178	Dr. C. H. Wintsch, Newark, N. J.....	1904	...	M	W	17	Nail in foot	7	....	0	.....	Per. oxid echinacea —antiseptics, caut.
179	" " " " " "	1904	...	M	W	32	Not given	10	42	0	.....	
180	Dr. J. E. Hurff, Blackwood, N. J.....	1903	Oct.	M	W	77	Splinter in hand....	6	10 hrs.	1	.....	Poultices.
181	Dr. G. W. Harrison, Albuquerque, N. M.	1882	...	M	W	12	Wound of foot.....	...	...	1	.....	Chloral and bromids.
182	Dr. W. D. Hancock, Millville, Ohio...	1904	May	M	W	6	Fork tine in foot...	7	4	1	4000 units....	Chloral and bromids.
183	Dr. C. B. Reid, Van Wert, Ohio.....	1896	Sept.	M	W	...	Nail in foot	14	53	0	Some used on 16th day.	Chloral and brom.; hyoscin, cannabis indica.
184	" " " " " " "	1903	July	M	W	15	Toy pistol, left hand..	12	30	0	.....	
185	Dr. R. W. Elliott, Cleveland, Ohio...	1900	...	M	W	13	Blk. cartridge—hand.	5	1	1	40 c.c. hypo....	
186	Lakeside Hospital, Cleveland, Ohio....	...	...	M	W	11	Blk. cartridge—hand.	8	1	1	30 c.c. hypo....	
187	" " " " " "	...	...	M	W	12	Rake in foot	6	2	1	.....	Chloral and bromids.
188	" " " " " "	1901	...	M	W	45	Crushed hand.....	10	2	1	10 c.c. hypo....	Amputation; C. & B.
189	" " " " " "	1902	...	M	W	8	Blk. cartridge—hand.	8	7	1	180 c.c. hypo...	
190	" " " " " "	1903	...	M	W	25	Blk. cartridge—hand.	7	4	1	25 c.c. in brain..	
191	" " " " " "	1903	...	F	W	18	Blk. cartridge—hand.	7	1	1	60 c.c. hypo...	
192	" " " " " "	1903	...	M	W	8	Blk. cartridge—hand.	7	2	1	80 c.c. hypo...	
193	" " " " " "	1903	...	M	W	8	Blk. cartridge, scrotum	6	2	1	10 c.c. hypo...	
194	" " " " " "	1903	...	M	W	13	Blk. cartridge—hand.	7	4	1	160 c.c.....	
195	" " " " " "	1904	...	M	W	34	Small wound—hand..	20	15	0	400 c.c. in spinal canal in 10 dys.	
196	" " " " " "	...	...	M	W	9	Barefoot, no wound..	....	6	1	180 c.c. in spinal canal.	
197	" " " " " "	...	...	M	W	14	Nail in foot.....	8	2	1	180 c.c. in spinal canal.	Chloral and bromids.
198	Dr. F. H. Bloomhardt, Altoona, Pa...	1903	...	M	W	38	After hemorrhoids operation.	40	17	0	.....	Carb. acid hypo.
199	" " " " " "	1903	June	M	W	13	Splinter in finger...	7	5	1	.....	
200	" " " " " "	1904	July	M	W	40	Nail in foot.....	5	20	1	.....	
201	" " " " " "	1904	Dec.	M	W	34	Index finger of hand.	9	90	0	Large doses...	C. & B., calabar bean.
202	Dr. J. M. Beck, Alexandria, Pa.....	1903	July	F	W	17	Toy pistol in finger..	...	...	0	.....	
203	Dr. W. J. Hertz, Allentown, Pa.....	1902	July	M	W	12	Sole of foot.....	6	1	1	90 c.c.....	Chloral and bromids.
204	Dr. C. L. Bradford, Austin, Pa.....	1905	Feb.	M	W	35	Lacerated arm	8	3	1	40 c.c.....	C. & B.; carb. and iodin locally.
205	" " " " " "	1899	Aug.	M	W	70	Razor wound of toe..	8	3	1	40 c.c.....	
206	Dr. J. A. Lynch, Cresson, Pa.....	1898	April	M	W	8	Nail in sole of foot..	7	5	1	.....	C. & B., carb. locally.
207	Dr. B. B. Levengood, Bellwood, Pa....	1904	July	M	W	13	Cartridge w'nd, thumb	10	6	1	.....	C. & B., carb. locally.
208	Dr. F. O. Bryant, Chester, Pa.....	1901	...	M	W	38	Gunshot wound.....	42	14	0	Large amount..	
209	" " " " " "	1900	...	M	W	12	Punctured wound..	7	4	1	Large amount..	
210	" " " " " "	1902	...	M	...	35	Punctured wound..	6	7	0	Large amount..	
211	Dr. J. D. Keller, Hanover, Pa.....	1904	May	M	W	12	.....	?	5	1	Amt. not stated.	Chloral and bromids.
215	Dr. W. Leiser, Lewisburg, Pa.....	1899	...	M	W	8	Nail in foot.....	7	5	1	.....	Chloral and brom.; hot applications, locally.
216	" " " " " "	1899	...	M	W	30	Gunshot wound, hand	6	14	0	.....	
217	" " " " " "	1899	...	M	W	32	Nail in foot.....	8	15	0	40 c.c.....	
218	Dr. M. L. Davis, Lancaster, Pa.....	1905	Feb.	M	W	64	Thumb crushed	6	5	1	40 c.c.....	Chloral and bromids

TABLE 1—(CONTINUED.)

Case No.	Name of Reporter.	Year.	Month.	Sex.	Race.	Age.	Infection Atrium.	Incubation—Days.	Duration—Days.	Mortality.	Serum Treatment	Local and General Treatment.
219	Dr. R. W. Hunter, McKeesport, Pa. . .	1904	July	M	W	11	Pistol wound, finger.	3	15	0	Heroic doses . .	Incision C. and B.
220	Dr. W. C. Baird, McKeesport, Pa. . . .	1900	July	M	W	20	Pistol wound, finger..	1	1	1	. . . . .	Ol Tigli.
221	Dr. L. J. Hammond, Philadelphia, Pa. .	1902	. . .	F	W	22	Caries of lower jaw .	21	8	1	Large doses, subcut. and in spinal canal.	C. and B. carbolic locally and subcutaneously, bloodletting and intravenous salt infusion.
222	" " " " " " " . .	1903		M	W	24	Brushburn of nose....	15	24	0		
223	" " " " " " " . .	1905	May	M	W	62	Dental caries	15	5	1		
224	Dr. J. M. Ellzy, Philadelphia, Pa. . . .	1905	April	M	W	58	Arm cut by saw. . . .	4	1	1	60 c.c. hypo. . .	Incision. C. and B.
225	Dr. H. A. Lowenburg, Philadelphia, Pa.	1905	April	F	W	27	Great toe.	5	4	1	20 c.c. hypo. . .	Chloral and bromids morphine.
226	Dr. G. H. Woods, Pine Grove Mills, Pa.	1901	. . .	M	W	7	Arm caught in wagon	4	4	1	. . . . .	Chloral and bromids.
227	Dr. E. W. Meredith, Pittsburg, Pa . . .	1904	July	M	W	12	Toy pistol—hand. . .	15	21	0	20 c.c. hypo. . . .	Amputation at elbow. C. and B.
228	Dr. E. W. Meredith, (Mercy Hospital), Pittsburg, Pa.	1904	. . .	M	W	9	Horse kick in face . .	2	2	1	30 c.c. hypo. . . .	Chloral and bromids.
229	Dr. E. W. Meredith, (Mercy Hospital,) Pittsburg Pa.	1904	Feb.	M	W	19	Dynamite explosion, face and eye.	9	5	1	Intracerebral amt. not stat'd	Eye enuclated antistreptoccic serum also used.
230	Dr. E. W. Meredith, (Mercy Hospital), Pittsburg, Pa.	1902	Mar.	M	W	35	Crush o foot.	5	2	1	Intracerebral amt. not stat'd	
231	Dr. E. W. Meredith, Pittsburg, Pa. . . .	1898	June	M	W	16	Comp. fracture, leg. .	7	5	1	Hypo amt. not stated.	Chloral and bromids.
232	Dr. J. S. Hammers, Pittsburg, Pa.. . . .	1904	Aug.	M	W	49	Laceration of forearm from wagon.	5	28	0	66 c.c. hypo . . .	12½ cc. of Murphy's fluid hypo.
233	Dr. H. F. Gross, York, Pa	1905	May	M	W	13	Foot wound.	5	36 hrs	1	. . . . .	Chloral and bromids
234	J. W. Babcock, Columbia, S. C.	1897	Dec.	M	C	35	Foot wound.	4	2	1	. . . . .	Chloral and bromids.
235	Dr. S. L. Jepson, Wheeling, W. Va. . .	1869	. . .	M	W	47	Unknown.	5	1	1	. . . . .	Chloral and bromids.
236	" " " " " " . . .	1872	. . .	M	C	13	Nail in foot.	2	2	1	. . . . .	Chloral and bromids
237	" " " " " " . . .	1898	July	M	C	8	Toy Pistol—hand. . .	14	14	0	. . . . .	Chloral and bromids
238	" " " " " " . . .	1898	July	M	C	7	Toy pistol—hand. . .	14	14	0	. . . . .	Chloral and bromids.
239	Dr W. P. Carr. Washington, D. C. . . .	1903	. . .	M	W	12	Vaccination wound. .	10	56	0	Amt. not stated.	Chloral and bromids.
240	" " (Emergency Hos'tal) " . . .	1902	. . .	M	W	24	Crushed foot.	. . .	. . .	0		
241	" " " " " " . . .	1903	. . .	M	C	40	Crushed foot	. . .	3	1	Amt. not stated.	Amputation under spinal anesthesia.
242	" " " " " " . . .	1900	. . .	M	C	45	Unknown	. . .	3	1	Amt. not stated.	
243	" " " " " " . . .	1903	. . .	M	C	45	Hand wound	. . .	5	1	Amt. not stated.	
244	" " " " " " . . .	1905	. . .	M	C	48	Hand wound	. . .	7	1		
245	Dr. W. H. Ross, Brentwood, N. Y. . . .	1889	Jan.	M	W	40	Splinter, thumb nail.	3	6	1	. . . . .	Chloral and bromids.
246	Dr. A. C. Morgan, Philadelphia, Pa. . .	1897	Oct.	M	W	41	Nail in foot.	6	2	1	. . . . .	C. and B. morphin. cocain, temp. 106.2.
247	Dr. W. F. Craig, Philadelphia, Pa. . . .	1898	Jan.	M	W	32	Kicked by man on foot and leg.	15	6	1	60 cc. hypo . . .	Chloral and bromids.
248	Dr. A. H. Baker, Elmira, N. Y.	1903	July	M	W	11	Toy pistol—hand. . . .	10	16	0	3 bottles hypo P. D. & Co. serum.	Chloral and bromids.
249	Dr. C. W. V. Brown, Elmira, N. Y. . . .	1891	. . .	M	W	7	Vaccination	7	6	1	. . . . .	Chloral and bromids.
250	Dr. R. H. Spangler, Philadelphia, Pa. .	1902	Nov.	M	W	28	Wound of finger . . .	. . .	12	1	30 c.c..	Chloral and bromids, carbolic acid.
251	Pennsylvania Hospital, Philadelphia. .	1905	April	F	W	9	Nail in foot.	6	4	1	Amt. not stated.	
252	Dr. B. W. Taylor, Columbia, S. C. . . .	1902	. . .	M	W	7	. . . . .	8	21	0	40 c.c. hypo . . .	Excision C. and B.

portal of entrance is by open wounds of any part of the body, no part, on account of its peculiar tissue formation, however, showing any predilection, but the point of implantation depends entirely on the most common seats of injury in general. Our tables show the extremities to have been the most common sites of infection, notably the hands and feet, although the figures indicate the great susceptibility of all parts of the body to the poison. The infection atria were recorded in 863 cases, with the interesting results shown in Table 6.

Males are more susceptible than females, according to our statistics, and this coincides with the prevailing opinion among writers on the subject, but the discrepancy in the number of cases furnished by the two sexes may be accounted for in part at least by the fact that males are more exposed to the infection than females. The robust are more receptive than the weak, and the nervous than the lymphatic. It is well-known that persons residing in localities in which the disease prevails endemically evince excitation of the nervous functions and that these nervous symptoms are markedly prominent when laboring under fevers and other diseases.[4] A student who developed tetanus from a dissecting wound of the finger reported that he had had a previous attack from a splinter in a finger some years before.[5]

There is much evidence to show that tetanus is directly transmissible and may give rise to epidemics. Kleiner[6] reports a case of tetanus neonatorum in a twin which was immediately isolated from the mother and other child; at the end of four days the sick child was brought back to the mother, who insisted on having it; five days after this occurred the second child became ill of the disease. Another instance is recorded of a case in a boy, whose brother also developed tetanus in ten days.[7] An epidemic of tetanus neonatorum occurred in Baltimore, in which 12 cases occurred in the practice of one midwife, all within a few blocks of each other.

TABLE 2.—DISTRIBUTION OF TETANUS CASES BY STATES.

Alabama	23	Missouri	77
Arkansas	3	Mississippi	6
Arizona	9	Nebraska	7
California	27	New Hampshire	7
Colorado	11	New Jersey	45
Connecticut	14	New Mexico	1
Delaware	4	New York	190
District of Columbia	14	North Carolina	15
Florida	2	Ohio	56
Georgia	17	Pennsylvania	224
Idaho	1	Rhode Island	15
Illinois	35	South Carolina	8
Indiana	25	South Dakota	1
Iowa	37	Texas	28
Kansas	3	Tennessee	16
Kentucky	23	Vermont	4
Louisiana	17	Virginia	21
Maine	9	West Virginia	4
Maryland	46	Wisconsin	4
Massachusets	30		
Michigan	25	Total	1,099
Minnesota	4		

INTERESTING CLINICAL FEATURES.

In our tabulated cases several interesting clinical features were noted.

In Case 36 the trismus was so great that the teeth were crushed down to their roots.

4. Carpenter, Transactions New Jersey Medical Society of 1874.
5. Boston Medical and Surgical Journal of 1863.
6. The Gross Medical College Bulletin, 1895.
7. Boston Medical and Surgical Journal, 1853.

In Case 61 fracture of the spinous processes of the vertebræ resulted from severe convulsions.

In Case 56 of our series during convalescence there was marked desquamation of the skin and enlargement of the lymphatic glands; antitoxin had not been used in this case.

In Case 22, in a morphin fiend, no one puncture could be designated as the site of infection.

In Case 10 the patient had a temperature of 1 degree F. every day during the period of incubation. This occurrence suggests the importance of recording the temperature in suspicious cases to determine whether there is any connection between the slight febrile movement and tetanus.

TABLE III.

MORTALITY OF TETANUS IN CENSUS YEARS AS SHOWN BY U. S. VITAL STATISTICS.

	1870.		1880.		1890.		1900.	
	Tetanus Neonatorum.	Total Cases.	Tetanus Neonatorum.	Total Cases.	Tetanus Neonatorum.	Total Cases.	Tetanus Neonatorum.	Total Cases.
Alabama	28	52	86	108	79	96	23	84
Arizona	.	.	.	.	.	.	.	3
Arkansas	4	8	16	25	7	15	1	11
California	7	19	.	11	9	29	7	36
Colorado	1	1	1	2	2	6	.	8
Connecticut	1	9	3	20	13	18	9	25
Dakota	.	.	.	1	.	.	.	.
Delaware	.	3	.	3	1	7	.	2
District of Columbia	2	6	9	10	52	58	9	12
Florida	4	11	26	35	27	33	26	100
Georgia	16	27	38	60	42	62	19	65
Idaho	.	1	.	.	.	.	.	.
Illinois	5	26	24	63	63	100	36	126
Indiana	4	13	17	40	10	34	11	67
*Iowa	3	8	3	13	10	15	.	38
Kansas	2	2	3	9	4	9	3	26
Kentucky	14	36	21	51	49	64	11	44
Louisiana	374	507	149	178	268	299	106	291
Maine	.	2	.	2	.	6	.	9
Maryland	14	31	15	24	36	46	16	64
Massachusetts	2	18	7	17	6	9	3	31
Michigan	1	6	3	8	13	31	7	33
Minnesota	1	3	8	12	7	13	2	38
Mississippi	34	48	47	61	19	29	2	22
Montana	.	.	.	.	.	.	.	1
*Indian Territory	.	.	.	.	.	.	.	3
Missouri	88	166	33	59	180	200	57	100
Nebraska	1	1	.	4	.	6	3	16
Nevada	.	.	.	2	.	.	.	.
New Hampshire	.	1	.	8	.	1	.	3
New Jersey	6	19	16	35	68	80	58	94
New Mexico	.	1	.	3	.	2	.	.
New York	58	112	14	50	99	146	57	204
North Carolina	7	13	39	54	12	18	8	46
North Dakota	.	.	.	.	.	2	1	2
Ohio	7	40	10	43	45	77	10	86
Oklahoma	.	.	.	.	.	.	.	.
Oregon	.	.	.	2	.	1	.	1
Pennsylvania	9	60	21	70	35	74	21	168
Rhode Island	.	3	3	6	2	5	2	9
South Carolina	29	42	26	31	106	114	67	99
South Dakota	.	.	.	.	3	3	.	2
Tennessee	25	46	52	84	35	58	6	47
Texas	183	212	212	256	126	157	11	136
Utah	.	.	.	.	.	1	1	4
Vermont	1	3	1	3	.	.	.	3
Virginia	43	65	43	61	47	65	15	66
Washington	.	.	.	1	.	.	.	1
West Virginia	.	1	2	7	4	9	.	5
Wisconsin	1	5	6	10	12	21	7	28
Wyoming	.	.	.	.	.	.	.	.
50 Largest Cities	.	.	762	995	.	.	.	.
Total	975	1627	1716	2537	1491	2019	595	2259

* The figures for 1900 are furnished by the Bureau of the Census, Division of Vital Statistics, Washington, and are incomplete for the non-registration states, which are Alabama, Arizona, Arkansas, California, Colorado, Delaware, Florida, Georgia, Idaho, Illinois, Indian Territory, Indiana, Iowa, Kansas Kentucky, Louisiana, Maryland, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, West Virginia, Wisconsin and Wyoming.

In another case the pulse, following an operation, remained above 100 without adequate explanation until tetanus supervened. Here may be mentioned that hyperpyrexia was noted in two cases of our series; this is supposed to be an ominous sign, but both instances ended in recovery.

Dr. D. C. Barber, Los Angeles, Cal., reports 10 cases to us as follows: 2 medical, 8 surgical; ages ranged from 2 to 50 years; 2 female, 8 male; all white; from 1890 to 1905; incubation period averaged 10 days; average duration 3 days; mortality 100 per cent; treatment consisted of opening wound and exposing it to the air; serum used freely in his later cases with no favorable results. Cocain introduced into the spinal canal relieved symptoms for hours in several cases, but without ultimate favorable effect.

In Case 24 Schleich's solution was used for the operation of intracranial injection with good results.

In Case 42, two days after injury, patient showed signs of irritability with unreasonable outbursts of anger, accompanied by jerky, spasmodic movements with a tendency to throw the head back, accompanied by nystagmus; radical operation on the hand was done at once and recovery followed with clearing up of the mental condition.

In Case 62 the patient was supposed to be insane from his remarkable distortions during the convulsions before the proper diagnosis was made.

In Case 74, recovery ensued after removal of a splinter that irritated the tibial nerve.

Dr. Chenoweth, Decatur, Ill., gives a partial record of 5 cases with 4 recoveries; no serum was used.

Dr. A. R. Edwards, Chicago, gives summary of his 8 cases as follows: average age 22 years; males; white; 7 from foot wounds, 1 from a horse kick in face; incubation not definite; average duration 3½ days; 5 recovered; 3 died, including the cephalic case; 5 to 7 bottles of serum were used in each case. The cephalic case had a very violent onset; it was associated with facial paralysis.

TABLE 4.—SEASONAL OCCURRENCE OF TETANUS.

January	35	August	59
February	36	September	68
March	41	October	75
April	42	November	47
May	57	December	37
June	61		
July	129	Total	687

TABLE 5.—TABLE OF AGES OF PATIENTS IN TETANUS CASES.

3 to 15 days	13	Over 50	14
1 to 5 years	24		
5 to 10 years	99	Total	583
10 to 15 years	130	Unclassified	618
15 to 20 years	70		
20 to 25 years	75	Total	1,201
25 to 30 years	44	SEX OF PATIENTS.	
30 to 35 years	42	Males	778
35 to 40 years	37	Females	203
40 to 45 years	22		
45 to 50 years	13	Total	981

Case 99 of our series was one of several which occurred in the Maine General Hospital in 1904, most of whom died; an investigation showed the source of the epidemic to be catgut ligatures which had been used. When a new supply of catgut was employed the epidemic abated.

Case 103 was one of 6 cases that followed the use of catgut. There is a coincidence between the epidemics of Portland, Me., and Lewistown, Me., and Dr. Weber is preparing a report of the cases.

Dr. O. C. Shickler, New Ulm, Minn., reports 14 cases without details, all of which proved fatal; serum was used in 2 of the cases without benefit.

Dr. P. W. Rowland, Oxford, Miss., reports 2 fatal cases minus details; no serum used.

Case 144 presented marked delusions.

Dr. H. T. Bahnson, Winston-Salem, N. C., reports that during the Civil War he, with other prisoners, was put into a shelter for horses; all of the wounded who were placed therein, who did not succumb directly to their wounds, developed tetanus, and all of them, 17 in number, died.

In Case 172, plugging of the nose was done for epistaxis; tetanus finally developed, and the patient died.

Dr. J. W. Ward, Trenton, N. J., reports one case in a man who had been bitten by a dog; the diagnosis of hydrophobia was maintained in this case for several days.

Case 201 presented the following interesting condition: On the eighth day after starting the antitoxin a marked erythema developed, producing great irritation of patient's skin; with

the onset of the rash the temperature went to 105 F., while delirium ensued with a well-marked typhoid state; in 2 days more the erythema changed to purpuric spots all over the body, completely obscuring the normal appearance of the skin; there were three successive groups of these purpuric spots in the next three weeks, the temperature meanwhile ranging from 103 to 105 F.; during this period, however, the tendency to convulsions ceased, but catarrhal nephritis now presented itself. In five weeks from the starting of the disease desquamation took place, the skin coming off in large scales; emaciation was extreme; at this time a slight enlargement of the right parotid gland developed and showed pus on aspiration; a week later a second swelling appeared on the lower jaw, which also yielded pus; this was later followed by suppuration of the sub-maxillary gland, and on this being drained the temperature came down to normal in two weeks. The patient eventually made a good recovery.

In Case 216 marked mental disturbance was noted for two months after recovery from convulsions, with perfect restoration at last.

TABLE 6.—TABLE OF INFECTION ATRIA.

	Total cases.	Death.	Recovery.
Cephalic	53	29	24
Abortion and miscarriage	21	16	5
Confinement	11	8	3
Neonatorum	22	15	7
Hand injury, Fourth of July	60	39	21
Hand fractures and dislocations	10	2	8
Hand crushed by machinery	29	19	10
Hand contused, lacerated or punctured	117	44	73
Hand, splinter in finger or hand	10	5	5
Arm, dislocation or fracture	19	16	3
Arm, contused, lacerated or incised	14	6	8
Arm, gunshot (not Fourth of July)	35	17	18
Foot injury, Fourth of July	9	5	4
Foot, contused, lacerated or incised	126	63	63
Foot, nail	106	54	52
Foot, splinter	36	13	23
Leg, fractures or dislocations	18	15	3
Leg, contused, lacerated or incised	32	15	17
Leg, gunshot (not Fourth of July)	17	8	9
Railroad accidents	6	1	5
Gunshot wounds of trunk	3	2	1
Burns of trunk	5	0	5
Burns of extremities	7	1	6
Bites and kicks	7	2	5
Leg ulcers (chronic)	3	2	1
Following operations. Enucleated eyeball	1	1	0
Following operations on rectum	6	4	2
Following operation. Leg amputation.	3	2	1
Following operations. Breast amputation	1	1	0
Following operations. Frost-bites amputation.	4	2	2
Following operations. Dividing finger tendons.	1	1	0
Following operations. Varicocele	1	1	0
Following operations. Herniotomy	2	2	0
Following operations. Appendectomy	2	1	1
Following operations. Laparotomy	7	6	1
Following operations. Perineorrhaphy	1	1	0
Following operations. Vaccination	33	24	9
Following hypodermics, morphin, quinin	4	4	0
Miscellaneous	21	10	11
Total	863	457	406
Upper extremity	296		
Lower	341		

In three additional cases marked desquamation similar to that of scarlet fever occurred, but serum had not been employed in these instances. In series of cases other than our own, urticaria and erythema after the use of antitoxin have been reported.

In three cases recorded the first symptom was pain referred to the diaphragm. In one instance 410 convulsions in 24 hours were counted by a competent nurse. Death took place on the second day and toward the close the convulsions were so frequent that an accurate count was impossible.

Case 239 was in a boy of 12, with vaccination sore, who played in a stable and washed the wound and dried it with dirty paper found there; recovery in 8 weeks, but stiffness remained 18 months.

Brown[8] has reported a moderate leucocytosis (14,000 per c.mm.) in one case which he observed. This symptom has not been mentioned by any of our correspondents and is not spoken of as a rule by authors of textbooks. The leucocytosis is most probably due to the wounds that serve as infection atria. But the question naturally arises, may not the increase in the number of leucocytes observed be due in part at least to the tetanus infection? If the leucocytosis depends on the traumatic lesions that are premonitory to the tetanus alone, then its degree of severity must vary with the extent of the local inflammatory process.

Finally, most of the cases scrutinized by us presented the usual train of symptoms and all of them showed trismus; this symptom cleared up the diagnosis in several cases that were strongly supposed at the outset to be simple colds, grippe, muscular rheumatism, and the like. Our studies also indicate the high diagnostic importance of the constancy of the tonic contractions in tetanus, since in other conditions, which simulate this disease, as hysteria, uremia, and strychnin poisoning, the contractions are intermittent.

We have analyzed the incubation period of 858 recorded cases, which are here tabulated; this table also shows the relation of incubation to the mortality rate:

TABLE 7.—TABLE OF COMPARISON.

Incubation to mortality.	Cases.	Recovery.	Death.
One day or less	23	14	9
Two days	21	13	8
Three days	29	10	19
Four days	39	14	25
Five days	82	29	53
Six days	57	16	41
Seven days	133	33	100
Eight Days	74	25	49
Nine Days	42	15	27
Ten days	88	56	32
Eleven days	23	9	14
Twelve days	35	18	17
Thirteen days	12	8	4
Fourteen days	59	39	20
Fifteen days	19	12	7
Over fifteen days	122	72	50
Totals	858	383	475

According to Table 7, it will be observed that 194, or 22.3 per cent. showed an incubation period of 5 days or less, with a mortality of 58.8 per cent. in these cases; 394 developed in from 5 to 10 days with a mortality of 63 per cent.; 148 gave an incubation of from 10 to 15 days with a death-rate of 42 per cent., and 98 cases developed in from 15 to 25 days with a mortality of 40 per cent.

Estimating the incubation according to the day of that period we found that those of greatest frequency were the fifth, with 82 cases; seventh, with 133 cases; eighth, with 74 cases, and the tenth with 88 cases. The mortality for all the cases that occurred within 10 days was 76.5 per cent., but rapidly decreased after that period had elapsed. In general, these results are in keeping with the incubation period usually given and the death-rate also corroborates previous statistics.

The period of incubation in vaccination tetanus seems to be longer than the above figures indicate, and the mortality is also higher, according to Willson.[9] Thus, "in 45 cases the period of incubation was over 14 days; in 21 it was 20 and over; in 1, 28 days, and in 6, 25 days or over."

DURATION OF THE DISEASE.

The duration of tetanus was given in 870 cases and these were also studied with reference to the mortality-rate, as shown by Table 8.

It will be observed that the highest mortality occurred on the seventh day, or in 86 cases; the second, 71 cases; the third, fourth and fifth days are rather constant, with about 50 deaths. From the tenth day

8. Journal Alumni Association, Coll. P. & S., Baltimore, Vol. iv, No. 3.

9. "An Analysis of Fifty-two Cases of Tetanus Following Vaccinia: With Reference to the Source of Infection," read before the Philadelphia County Medical Society, April 23, 1903; The Journal A. M. A., May 3-10, 1902.

gradually, and the fifteenth rapidly, the mortality decreased. Again of cases lasting 5 days or less, there were 338, with a mortality of 275 or 81.4 per cent.; in those giving a duration from 5 to 10 days, or 231 cases, 144 deaths occurred, or 63 per cent., and those lasting from 10 to 15 days, 91 cases with 27 deaths, or 30 per cent. Acute tetanus or that which developed within 10 days gave a total of 568 cases and a mortality of 74 per cent. On the other hand, 211 cases lasted over 15 days, with only 18 deaths, or 8.5 per cent. mortality.

TABLE 8.—TABLE OF COMPARISON.

Duration to Mortality.	Cases.	Recovery	Death.
Less than one day	7	1	6
One day	47	9	38
Two days	79	8	71
Three days	71	13	58
Four days	66	16	50
Five days	68	16	52
Six days	35	8	27
Seven days	86	30	56
Eight days	33	9	24
Nine days	25	9	16
Ten days	51	30	21
Ten to fifteen days	91	64	27
Fifteen to twenty days	46	41	5
Twenty days and over	165	152	13
Totals	870	406	464

TREATMENT.

The measures employed in the treatment of tetanus have been many and varied; they may be considered under two heads: (a) Local, and (b) General.

(*a*) *Local Measures.*—From our investigations there is uniform agreement that the immediate radical treatment of all wounds, in which there is ground for suspecting that tetanus may develop, is of the highest value. Many of the cases received the local carbolic acid treatment with more or less beneficial effect, and favorable results have been noticed by certain observers from the ice treatment of tetanus, which consists in immersing the part affected in ice with salt, or putting the patient in a very cold room. The most important method is to open freely the wounds in all directions under an anesthetic, as the chief danger is in the poison that occupies the bottom of any wound or part infected. Many of our correspondents have testified to the great efficiency of the dried serum used as a dusting powder after thorough incision and excision of the infected wounds.

(*b*) *General Measures.*—The serum treatment apart, certain other methods while not curative are decidedly beneficial and comforting to the patient. According to our responses, the chloral and bromid treatment has been used far oftener than any other. Calabar bean has numerous advocates and morphin has been much employed, but theoretically it should be used with caution and reserve on account of its inhibitory effect on the respiratory centers, as death in tetanus is usually by paralysis of respiration. Cocain used intraspinally gave temporary relief from the convulsions in one case but death finally occurred.

Antitoxin Treatment.—Much attention has been given to the serum treatment in recent times and quite as important as the immediate radical treatment of all wounds coupled with the local use of the dried serum, are prophylactic injections of antitoxin, preferably subcutaneously. As a means of prophylaxis, the serum has been fully tested both in America and abroad and there is uniform agreement that "antitoxin does protect" in every case. As a striking example of its efficacy, Scherck[10] gives the following report of results: "In 1903 there were 56 cases of Fourth of July injuries treated, with 16 deaths from tetanus resulting; in 1904, 37 accident cases were treated, every one of which was given prophylactic injections of serum, with the result that no cases of tetanus developed."

On the other hand, the present status of the serum question leaves no room for doubting that when given during a well-developed case of tetanus, antitoxin does not have any appreciable beneficial effect, neither the mortality being reduced nor recovery hastened thereby. Booth,[11] however, has quite recently reported three cases in which the serum was employed, all ending in recovery. Finally, as a prophylactic measure, it is practically perfect and should be used in every case of punctured, lacerated, or other wound in which there has been a suspicion of contact with tetanized matter.

DISCUSSION.

DR. L. L. MCARTHUR, Chicago, said that the diagnosis is made in the last stage usually after the spinal nerve elements have become seriously, if not fatally, invaded. If one waits until the sixth, seventh, eighth or ninth day to make a diagnosis, and then begins to note the cervical muscles stiffening, one is too late to use antitoxin successfully. During the past ten years, since the World's Fair in Chicago, it has been Dr. McArthur's practice to administer on the first, second and third day, prior even to the report of the bacteriologist, three successive inoculations with the antitetanic serum. In the cases in which this has been done tetanus has not developed. Although the cultivation of the tetanus organism is very difficult, the mere use of this serum can not do any harm and in a long series of cases in which tetanus might have been expected, Dr. McArthur said that the use of serum has prevented it.

DR. G. W. MCCASKEY, Fort Wayne, Ind., said that this condition resolves itself into a matter of treatment, as all know the cause, and the treatment should begin with the inspection of the wound. Subjecting a patient who has had a suspicious injury to antitetanic serum is hardly rational, as there is a better treatment, the immediate cleansing of the wound. The opening of the wound is always necessary and, no further treatment need be instituted; particularly is antitetanic treatment unnecessary. It is purely a matter of infection and the condition should be treated like any other infection. Dr. McCaskey said that some time ago he used transfusion after depleting the patient pretty well by removing considerable blood, and the treatment proved to be good. Reports regarding therapeutic measures are speculative. Some cases will get well under any sort of treatment.

DR. WALSH, Erie, Pa., said that some one had declared it easy to prevent tetanus by closing the wound shortly after the accident. Dr. Walsh said that in an injury caused by a slight kick on the ankle he thoroughly cleansed the wound within an hour and then used pure carbolic acid. The wound healed within a week, but three weeks later the man developed tetanus and died.

DR. R. A. MCLEAN, San Francisco, said that it has been demonstrated that the tetanus toxin has its effect on the nerve cells of the spinal cord and that it reaches these cells only by way of the axis cylinder of such nerves. The toxin reaches the nerve itself immediately at the site of injury, and then reaches the motor nerves all over the body. The treatment resolves itself into getting the antitoxin in contact with the toxin, and it has very little effect until it is injected into a large vein, it being so quickly destroyed in the tissues. It appears to have been demonstrated that the proper thing to do is to expose the nerve trunk, puncture the medullary sheath with a fine needle, and inject directly into the nerve trunk, using sufficient antitoxin to swell the nerve up to three or four times its normal size; this should be repeated daily, and if necessary several times a day, as the effect is quickly destroyed. It acts as a block to the upward passage of the toxin along the nerve, but has no effect when used just under the skin. The local treatment should come last.

10. Therapeutic Gazette, Nov., 1904.

11. Jour. Amer. Med. Assn., July 1, 1905, p. 42.

The toxin is being absorbed constantly from the wound, so that the nerve passages should be treated first and the wound afterward, as the antitoxin will be working in the meantime. In a bad case the antitoxin should be injected directly into the cord itself, to block the passage up the cord.

DR. ANDERS said that the treatment consists in prophylactic injections of the serum and that the value of antitoxin is prophylactic rather than curative. Antitoxin does protect. It should be injected into the nerve trunk above the site of infection. Its value after the disease has developed is very doubtful, and in the majority of instances writers have reported negatively. Few claim recovery has occurred from the antitoxin injection. As the best treatment is prophylactic, it behooves us to endeavor to ascertain whether tetanus is likely to develop or not. In all wounds involving the deeper connective tissues prophylactic inoculations should be made. Dr. Anders repeated that in their paper mention was made of certain symptoms which are followed by attacks of tetanus, such as increased pulse rate, without any other assignable cause; peculiar nerve irritation, etc. These things should be very carefully noted and further investigation made to ascertain whether or not they have assumed diagnostic importance. That tetanus may be prevented but not cured seems to be the present opinion. As to other forms of treatment, the less said the better. The use locally of dried serum has been followed by almost uniformly good results, but surgeons are better acquainted with this matter than physicians.

SPLANCHNOPTOSIS FROM A SURGICAL STANDPOINT.*

JAMES E. MOORE, M.D.
MINNEAPOLIS.

Gynecology sprang into existence as an offshoot from medicine to meet the demands of suffering womankind for more successful treatment of a train of symptoms, presumably due to disturbed conditions of the pelvic organs. Gynecologists first learned that a certain number of these symptoms could be relieved by replacing misplaced pelvic organs and by supporting them through mechanical means, but they soon learned that this relief was only temporary, and that better and more permanent relief could be obtained by repairing the faulty natural supports by means of a surgical operation, which soon led to the abandonment of pessaries. They then learned that many patients referred to them by physicians, who had been cured of all abnormal pelvic conditions, still had a train of grave disabling symptoms unaccounted for. These unfortunate patients were referred back to the physician, who pronounced them hysteric or dyspeptic, and treated them accordingly and with unsatisfactory results; they were next turned over to the neurologists, who said that they were suffering from neurasthenia, which they defined as "a functional morbid condition of the nervous system, of which the underlying characteristics are weakness and excessive irritability."[1] Of the reflex influences believed to cause and keep up neurasthenia, disturbances of the stomach, intestines and liver were considered the most prominent. Their treatment of these cases was successful, so far as they relieved digestive disturbances only. Osler describes neurasthenia as a term invented by Beard to cover an ill-defined, motley group of symptoms which may be general or local, and speaks of it as a physical counterpart of insanity.

Surgeons have learned to cure many cases of chronic dyspepsia by removing gallstones and chronically inflamed appendices, and by curing gastric ulcers, and they are now encroaching on the domain of the neurologist by operating in some cases of neurasthenia. They are shortening up distended abdominal walls, fastening up prolapsed kidneys, livers, spleens, stomachs and intestines; they are, in short, treating splanchnoptosis by surgical means. Neurologists have founded their treatment on the theory that the splanchnoptosis found in these cases is secondary to the nervous condition, while the surgeon who is prone to believe that mechanical conditions can be relieved by mechanical means only is inclined to believe that the nervous condition is secondary to the ptosis.

The confusion and misapplication of terms used to designate ptosis of the abdominal viscera are so great that it is difficult, if not impossible, to give a correct résumé of the literature on this subject. The term splanchnoptosis, meaning as it does falling of viscera, should be used as a general term comprising gastroptosis, enteroptosis, nephroptosis, hepatoptosis and splenoptosis, but in literature it has frequently been applied to some one of these conditions, and, on the other hand, the terms enteroptosis and gastroptosis have frequently been used in a general sense.

Glenard,[2] in 1885, was the first to give a clear and distinct description of neurasthenia, and the term Glenard's disease is very commonly applied to this condition by French and English writers. He says that neurasthenia is a disease in which all organs are involved, and maintains that it never exists without digestive troubles, patent or concealed, and that methodical exploration will disclose the following four important signs: 1, Flaccidity of the abdominal walls with diminution of abdominal tension; 2, prolapse of the intestinal mass, enteroptosis, nephroptosis, hepatoptosis and splenoptosis; 3, enterostenosis; 4, gastroptosis and gastric atony. He says that enteroptosis can not exist without a host of disturbances, among which he mentions atresia of the gastrointestinal lumen at suspensory points, prolapse of the right flexure of the colon where it is poorly suspended, exclusion of the stomach from the rôle of supporting the transverse colon, and the vicious circle. He believes that the cycle of enteroptosis usually begins at the right flexure of the colon, because of its poor support and its location beneath the liver.

The causes of splanchnoptosis are not well understood. Many conflicting theories have been advanced, but no one of these will explain all cases. Steller[3] concludes that it is congenital, due to general congenital relaxation, particularly of ligaments. Tedeschi[4] reports a case of Glenard's disease in a male child 5 years old which was doubtless congenital. Ingalls[5] arrives at the conclusion "by exclusion," that trophic changes cause relaxation of ligaments and abdominal wall. Carion and Hallon[6] prove by experiment on the dog that section of both pneumogastrics cause complete atony and permanent dilatation of the stomach. Pawlow and Katschkowsky[7] show that cutting the vagi produces only temporary disturbance of gastric movements.

Keith,[8] in his Hunterian lectures on the "Nature and Anatomy of Enteroptosis," states that too much impor-

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. Dana: Text-Book on "Nervous Diseases," 1892.

2. Glenard: Semaine Med., Paris, 1886, vol. vi, page 211. Bull. et Mem. Soc. Med. de Hop. de Paris, 1886, vol. 3, p. 888, 499-509.

3. Steller: Archivs f. Verdauungskrankh, vol. ii, p. 185, 1896.

4. Tedeschi: Arte med. Napole, 1902, vol. iv, pages 930-934.

5. Ingalls: Annals of Surgery, 1902, vol. xxxv, pages 319-330.

6. Carion and Hallon: La Semaine Medicale, Paris, Aug. 31, 1895.

7. Pawlow and Katschokowsky: The Work of Digestive Glands, English translation, London, 1902, p. 175.

8. Keith: London Lancet, March 7-14, 1903.

tance has been attached to peritoneal support of viscera. He believes that vitiated methods of respiration push the organs down and the weakened abdominal muscles can not get them back. He says that often where but one organ is supposed to be prolapsed, others will be found in this condition if sought for. He believes that ptosis of the liver and stomach are due to relaxation of the abdominal walls which maintain the visceral shelves on which they rest.

Traumatism is mentioned as a probable cause, but the disease is more common in women than in men, and the reverse would be true if traumatism were a frequent cause. The wearing of corsets is mentioned by many as a cause, but the most popular palliative treatment is abdominal supports. We can understand that the wearing of corsets and heavy skirts without shoulder support can act by directly dragging down the organs, and what is probably more important, by constant pressure they weaken the abdominal walls. It is illogical, however, to lay too much stress on this point, because ptosis occurs very frequently in men.

Pregnancy is doubtless a potent causative factor in some cases, but it is common in women who have not borne children. Max Einhorn[9] says that visceral ptosis is most frequently caused by states of inanition, no matter of what origin, and that a high degree of long-continued subnutrition alone is sufficient to cause marked enteroptosis and cardioptosis.

The symptoms of splanchnoptosis vary according to which organ or organs are most affected, but in a general way they are those of neurasthenia. The patient is more or less an invalid, suffering from general ill health, and mental depression. She is comfortable in the recumbent position only. She has a sense of dragging and weight, and suffers from constant weariness. Her stomach burns and vomiting is a frequent symptom. She has pain, anorexia and the full complement of dyspeptic symptoms. She becomes anemic and suffers from obstinate constipation, alternating with diarrhea. Her stomach and bowels are constantly distended with gas, and she is troubled with eructations. She has pressure on the uterus and bladder. Her epigastrium is tender, and she suffers from occasional colics or gastric crises.

A patient suffering from this train of symptoms should never be pronounced dyspeptic, hysteric or neurasthenic, and be sent away with a prescription without having a most careful physical examination made.

The diagnosis of ptosis of the various abdominal organs is usually easily made by percussion and palpation, because they usually occur in thin persons, and the flabby abdominal wall, which is so prominent a feature of this condition, enables the examiner to pass his fingers well down around the various organs. Prolapsed kidneys and stomachs and the means for their detection are so familiar to all that it is only necessary to mention them. The flabby abdominal wall, prominent below and flat above, through which can be felt the prolapsed and distended transverse colon, render a diagnosis of enteroptosis comparatively easy.

Although the liver is the largest and heaviest organ involved in splanchnoptosis, it is the one which has attracted the least attention. Hepatoptosis is doubtless very much more frequently involved than we have heretofore believed, and when the liver does prolapse all the other organs must come with it because of their anatomic relations. Its margin can be readily detected below the costal margin and when normal in shape is easily recognized. Floating or misshapen lobes, which are quite common, may readily lead to mistaken diagnosis. The elongated right lobe may be mistaken for a kidney, distended gall bladder or a new growth. In several instances, when operating for gallstones in women, I have found a thin, sharp-edged right lobe extending well down toward the umbilicus, even when the organ was not prolapsed, which was due either to an abnormal shape or a rotation forward of the organ on its transverse axis. We are so accustomed to think of the liver as a right-sided organ that we are apt to forget that it extends well over to the left side. An enlarged or prolapsed left lobe has been frequently mistaken for a left floating kidney. Glenard called attention to the fact that the lower part of the umbilicus is often hidden in a fold of the skin, due to traction on the suspensory ligament by a prolapsed liver.

A prolapsed or floating spleen is easily detected by its shape and location.

Glenard said that splanchnoptosis is incurable, but he recommended medical treatment and the abdominal binder only. The abdominal binder still holds a prominent place in the treatment of this condition, just as the pessary did in gynecology, and it, like the pessary, is very liable to give way to surgery; not but that it is and always can be useful in some cases, but it is the tendency of our profession to go to extremes. Possibly it is necessary for us to go to extremes in this matter to ascertain just what can and what can not be accomplished by surgery. The fact that this work can be done almost without mortality gives us no license to operate indiscriminately, but it does entitle these sufferers to the help of surgery. It behooves us, however, to be ever on our guard lest we attribute undue importance to certain mechanical defects, because these defects often exist without causing symptoms. We must remember, too, that some well-marked cases of ptosis of various organs can be restored to their normal position by rest, abdominal support and proper feeding. Max Einhorn[10] reports a number of cases demonstrating this fact. He demonstrates that proper feeding, thus increasing the patients weight, is a most important factor. L. W. Atlee[11] reports a number of cases demonstrating that some patients can be entirely relieved by medical treatment even when they have suffered from crises and without the prolapsed organs having been restored to place.

When a patient comes to us with "this motley array of symptoms," we should not pick out some one offending organ and operate on it, but we should make a thorough diagnosis and do a complete operation. The relative frequency and importance of ptosis of the various organs depend entirely on the observer's viewpoint. When the time comes that the internist, the neurologist, the gynecologist, and the surgeon observe these cases from one broad viewpoint, we shall be in a position to accomplish the most good. The surgeon should not recommend operative treatment until intelligent medical treatment has been tried, for without this it is impossible for him to decide in a given case which is the more important, the neurasthenia or the splanchnoptosis, but when medical treatment has failed and mechanical defects obtain, it is his duty to operate regardless of causes. Even then

9. Einhorn; New York Med. Journal, April 15, 1905.

10. Einhorn: New York Med. Journal, April 5, 1905.
11. Atlee: New York Med. Journal, April 5, 1905.

he must not offer surgery as a panacea, because there is a possibility that the neurasthenia may continue after all mechanical defects have been repaired. We should not be discouraged because of the failure following halfway operations on single organs when several were involved. The more complete operations have shown very encouraging results, and until it has been demonstrated that complete operations fail to cure it is our duty to perform them, and halfway work should give place to thorough work.

The surgery of splanchnoptosis must go through a process of evolution just as all other abdominal surgery has, but it is to be hoped that we can profit somewhat by past experiences. It is, perhaps, fortunate that most of the organs involved are vital, so they will not go through the same experiences that the long-suffering ovary has. The prolapsed kidney, because of its location outside the peritoneum and its easy detection, has given us our largest experience, and that experience is far from flattering, but when we remember that it has very commonly been operated on independent of other conditions which usually exist our failures are not to be wondered at.

Glenard[12] says that nephroptosis of the healthy kidney is found only in nervous dyspeptics with intestinal ptosis, and that the syndrome is digestive rather than nervous. He says that the painful gastric or abdominal crises usually attributed to the kidney are caused by the kidney only when it is diseased. They may occur when the kidney is healthy, and even when it is not movable, but they are then duodenal. He says that the left kidney is less frequently prolapsed, because it is bound to the spleen and the spleen to the diaphragm.

The various operations for nephropexy are so familiar to all that it is unnecessary to describe them. It should be remembered that operations on patients suffering from gastric crises due to a diseased, prolapsed kidney are not to be undertaken without most careful preparatory treatment, because they are liable to have suppression of urine after. Dietel's crisis, coming on, as it does, with severe abdominal pain, nausea, vomiting, collapse and sometimes very high temperature, may be mistaken for gallstone colic or other conditions with disastrous results.

A prolapsed or wandering spleen is not nearly so common as a prolapsed right kidney, but may accompany a left kidney in prolapse on account of their attachment. Its shape and intraperitoneal location are sufficient to enable the examiner to differentiate between it and the kidney. Splenectomy has been the usual treatment for splenoptosis, but this is an unwarranted operation if it can be securely anchored. Rydygier was the first to advocate splenopexy, but admitted that the operation was not certainly permanent. Bardenheuer performed a successful splenopexy by passing the spleen out through a slit in the peritoneum, anchoring it to the tenth rib and then closing the peritoneum.

As long as surgeons devote their whole attention to the shortening of suspensory ligaments for prolapsed abdominal organs they are sure to meet with a large percentage of failures, because these slender reduplications to the peritoneum were surely not intended by nature to bear the weight of these organs. The intra-abdominal condition has been aptly compared to hydrostatic pressure, with the liver, stomach and colon floating on top. The comparatively frail ligaments of the liver would not support that heavy organ very long were it not for the supporting air cushion below, but as long as this support from below is normal the ligaments are sufficient, just as the weight of the human body can be supported in water by a cord that would support only a small fraction of its weight in air. Schwerdt estimates that these ligaments support only about one-eighth of the weight of the organs.

Ever since the term neurasthenia has been used the train of dyspeptic symptoms usually referred to the stomach have borne a prominent part. It is a recognized fact that a prolapsed and dilated stomach is a very common condition in neurasthenic patients. Neurasthenia is believed to be sometimes due to absorption of toxic products from a dyspeptic stomach. It is still a moot point as to whether a prolapsed stomach or neurasthenia when found together is the primary condition, because each of these conditions may exist without the other, but this we do know that the cure of the prolapse will oftttimes cure the nervous condition, and this can be done only exceptionally without the aid of surgery.

Duret[13] of Lille, in 1896, was the first to operate for gastroptosis. He stitched the stomach to the abdominal wall.

Davis,[14] in 1897, stitched the lesser omentum to the peritoneum for gastroptosis, and supplemented this by shortening the mesentery for an accompanying enteroptosis.

Rovsing,[15] in 1899, reported three cases in which he stitched the stomach to the anterior abdominal wall with improvement. Nephropexy was also performed in these cases.

Bier,[16] in 1900, reported four successful cases in which he elevated the prolapsed stomach by plicating the gastrohepatic and gastrophrenic ligaments and fastening the pylorus to the abdominal wall.

Coffey,[17] in 1902, reported two cases in which he supported the stomach by sewing the greater omentum to the abdominal wall, and in 1904 he reported[18] additional cases. He attaches the omentum as it comes off from the greater curvature of the stomach to the abdominal wall an inch above the umbilicus. The stitches were of chromic gut and were placed about an inch from the stomach. He reports good results even when the stomach was dilated. In extreme cases of prolapse of the colon he recommends that the omentum be attached to the abdominal wall both above and below the colon.

Beyea,[19] in 1903, gave details of a new operation for gastroptosis, with a report of seven cases that he had had under observation for from seven months to three and one-half years after operation. In all of these patients the improvement had been most remarkable. Their dyspepsia and neurasthenia had been permanently cured. In a later article[20] he reported additional operations by himself and others, with good results. His operation is like Bier's, save that he does not attach the pylorus to the abdominal wall. He plicates the gastrohepatic and gastrophrenic ligaments by repeated transverse rows of chromic gut sutures.

Morris,[21] in 1902, contributed an article on the surgi-

12. Glenard: Bull. et Mem. Soc. Med. de Hop. de Paris, 1893, 3, s. x. 882.

13. Duret: Rev. de Chirurg., 1896, p. 430.
14. Davis: Western Med. Review, October, 1897, p. 291.
15. Rovsing: Archiv. für Chirurg. vol lx, 1899, p. 812.
16. Bier: Deutsche Zeitschrift für Chirurg., 1900, lvi, p. 374.
17. Coffey: Philadelphia Med. Journal, Oct. 11, 1902.
18. Coffey: Transac. Western Surg. and Gyn. Assn., 1904.
19. Beyea: Philadelphia Med. Journal, Feb. 1903.
20. Beyea: American Medicine, Oct. 8, 1904, p. 629.
21. Morris: Medical News, June 28, 1902.

cal treatment of ptosis. He recommended that sufficient peritoneum and transversalis fascia be removed to shorten up the relaxed abdominal wall, and that the recti be fastened together. He shortens the falciform and suspensory ligaments of the liver after scarifying them and irritating the opposing surfaces of the liver and diaphragm. In two cases he performed nephropexy at the same time. He attributes the ptosis to the relaxed abdominal wall, and believes his operation superior to Webster's, in which the recti are brought together extraperitoneally. He states that many of these patients have umbilical hernia, and attributes some of the symptoms to dragging on the vena cava. He hesitated to plicate the gastrohepatic omentum on account of the important anatomic structures contained in it.

Lambotte,[22] in 1891, contributed a paper on the surgical treatment of enteroptosis, in which he reported four patients operated on successfully by attaching the splenic and hepatic flexures of the colon to the abdominal wall.

As a rule in gastroptosis, the pyloric end only is prolapsed. The fishhook stomach of Killing is due to nondescent of the duodenum and leads to obstruction, dilatation and atony of the organ. Gastroptosis may be accompanied by general dilatation or pyloric dilatation. When dilatation of the stomach exists without pyloric stenosis it is usually due to gastroptosis.

I am inclined to view this part of our subject from Morris' standpoint, because it is in those cases in which gastroptosis and enteroptosis are prominent features that the most relief can be afforded by abdominal bandages or support by adhesive plaster, as recommended by Rose.[23] Any operation in which a direct attachment of the stomach to the abdominal wall is made I believe to be bad surgery, because we have all been obliged to operate for the relief of gastric adhesions. The plication of the gastrohepatic and gastrosplenic omentum is theoretically good, but in my limited experience I have not been so fortunate as Beyea, because these frail tissues have failed to hold. In one case in which I thoroughly plicated the gastrocolic omentum for a prolapsed colon, I was obliged to reoperate in six weeks. In this case the transverse colon was constantly distended like a balloon and dropped to the very bottom of the pelvis. The patient was a confirmed invalid and suffered constant pain from gas in the colon. There was marked stenosis at the splenic flexure, which was held in almost its normal position. At my second operation I performed an anastomosis between the prolapsed colon and the sigmoid, with a most satisfactory result. The patient's gastroptosis and neurasthenia were cured. She gained twenty-five pounds in weight in a few weeks, and again assumed her duties as a farmer's wife.

The best operation for a dilated stomach, whether due primarily to ptosis or to pyloric stenosis is undoubtedly a gastroenterostomy, but when the dilatation is due to atony this operation is contraindicated.

Coffey's operation is open to serious objection theoretically, notwithstanding the author's favorable cases. The attachment of the omentum to the abdominal wall so closely resembles the epigastric omental hernias we have so often been obliged to operate for that I should fear it might produce the same symptoms.

Bilroth performed a partial hepatopexy in 1884, but Marchand performed the first complete operation in 1891.

In 1897 Ramsey[24] reported a case in which he performed fixation of the liver and both kidneys for Glenard's disease. The right and left kidneys were anchored at different times, but the symptoms were not relieved; he then anchored the prolapsed liver by shortening the round ligament with silk sutures and fastening it to the cartilage of the seventh rib. He rubbed the upper surface of the liver with gauze and then passed a double kangaroo-tendon suture through the liver two inches from its right border and fastened it to the parietes. The liver became firmly fixed, and the patient experienced complete relief.

In 1897 Terrier and Avery[25] contributed a valuable article on hepatoptosis, which was reviewed and added to by Binne[26] in 1898. They recommended abdominal support as palliative treatment, and, this failing, they recommend hepatopexy. They advised catgut or silk sutures through the substance of the liver and all layers of the abdominal wall. They conclude that the method of Depage is best. He operated on the relaxed abdominal wall at the same time he performed hepatopexy. They quote Lannelongue's results following complete hepatopexy. Of eleven cases, eight gave satisfactory results, two were uncertain and one died from peritonitis.

In 1902 Jonas[27] reported two cases in which he supported a floating liver successfully by attaching the gall bladder to the upper end of the wound after removing gallstones. Da Costa and Gibbons have also performed this operation.

Eliot,[28] in 1904, recommends that in cases of gastroptosis accompanied by hepatoptosis the liver be anchored firmly in place so that the underlying organs will be relieved of the superincumbent weight. He supports the liver by fastening the round ligament to the abdominal wall with chromic catgut stitches.

The anatomic peculiarities of the liver are such that surgeons have long been deterred from attacking it. Recent experiences, however, have taught us that our fears are groundless. In hepatoptosis the indications are to replace the organ and fix it there, and it has been demonstrated that hepatopexy is a safe and satisfactory operation. Coarse sutures of chromic catgut or kangaroo-tendon should be used, and it is better to use a goodly number of them so they will not cut through. The mattress suture is the best. A round, pointed, slightly curved needle should be passed through the liver about an inch and a half from its margin from below upward, then through a good bite of the soft parts underneath the costal cartilages, and then downward through the liver again so the knots can be tied below when the liver is held in place. All of the sutures should be passed before any are tied. The diaphragm has been perforated in this operation, but no harm has resulted. The slight hemorrhage following the introduction of the sutures stops when they are tied.

These are undesirable patients, because of their extremely stormy convalescence, but the immediate prognosis is good, and, while the sum total of our experience

22. Lambotte: Presse Med., Belge., 1891, Nos. 24, 25, 26.
23. Rose: New York Med. Journal, May, 1900.
24. Ramsay: British Med. Journal, May 8, 1897.
25. Terrier and Avery: Rev. de Chir., August and September, 1897.
26. Binne: Review and Comments on Terrier and Averys' article, Annals of Surgery, January, 1898.
27. Jonas: Journal A. M. A., March 29, 1902.
28. Eliot: Med. News, Nov. 12, 1904, p. 913.

in the surgery of splanchnoptosis is too limited to enable us to draw definite conclusions as to end results, it is so far sufficiently encouraging to justify the belief that we may be able in future to restore to health and usefulness many who have heretofore been condemned to hopeless invalidism.

DISCUSSION.

DR. R. C. COFFEY, Portland, Ore., expressed the belief that in the future the surgeon will be able to take many of the neurologist's cases, and to improve some of the nervous wrecks that have been made by the removal of various organs. The important question is as to how much depends on the natural supports of these organs. The general opinion is that there is something in intra-abdominal pressure, but this is a matter of speculation, and one cannot tell much about it. The only possible support is the peritoneal ligament. The connective tissue gives elasticity through the peritoneum. The suspensory ligaments of the liver will hold from five to fifteen times the weight of this organ. Dr. Coffey showed diagrams of the procedures in various cases and described the results. In one the uterus was not displaced but the kidneys were dragged down and the operation was done to anchor both kidneys. There was plication of the broad ligament. Five sutures were passed through the liver and fastened to the abdominal wall. This was two and a half years ago. The patient had been an invalid for six months, but Dr. Coffey reported that she is now a useful member of society. Two months ago the liver was found still in position. Dr. Coffey has had a large number of these cases, and Dr. Clark of Philadelphia has reported a number.

DR. A. ERNEST GALLANT, New York, said that all the symptoms of which patients with dilated stomachs complain can be relieved by posture, but if the patient is put on her feet all the symptoms will return in a short time. From an experience covering twelve years he is thoroughly convinced that when these organs are sutured up they do not stay up. The construction of the clothes of the average woman is such that she has to tie them on around her waist, and there is no surgery that will overcome this force. That strain at the waist if anything is to be accomplished with or without surgery. Dr. Gallant takes advantage of posture in restoring the organs to their normal relations, and advises the use of a special corset which will relieve the tension at the waist. There is ample evidence of the success of this method from the fact that the stomach will bulge at the epigastrium.

DR. B. B. DAVIS, Omaha, Neb., said that he has done a number of operations of this kind and some of the patients have been relieved and some have not. He knows of no surgical condition that gives him more of a feeling of helplessness than relaxed abdominal muscles and all the organs lower than they should be. If all the conditions under which the patients are laboring could be removed surgery might be successful, but the kidneys are down, the liver is down, the intestines are down, and in addition there is a very weak abdominal wall. These patients have the appearance of a pear; the abdomen is shaped like a pear with the base down. He has found that in some of them when he can anchor the liver and anchor the stomach, by using the lesser omentum and then elevating the mesentery in cases of this kind, in which he did a very extensive operation, he has been pleased with the result. In one case particularly, after the operation the woman was able to do her own housework. This he considers a good result. In addition to anchoring the organs a foreshortening of the abdominal wall should be produced. One must endeavor also to produce a better tone of the muscles.

DR. MOORE recently found it necessary to look up the question of prolapse of the liver due to traumatism. It was in the case of a suit brought against a corporation. He found that there were no cases on record of the liver being torn from its moorings by injury. The experiments on pigs, of course, are of very little value, as human beings do not travel like pigs, but the experiments demonstrate how the adhesions take place.

DUTY OF PHYSICIAN TO PATIENTS WITH PERINEAL LACERATIONS.*

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During my short experience as a practitioner of medicine few things have impressed me more than the great number of perineal lacerations in women, and no impression has been more profound than that made by the untold suffering endured and the physical and nervous wrecks found as a direct result of perineal lacerations, or of some of the numerous pathologic conditions attendant on or resulting from these conditions. Schroeder has shown that in primiparæ the fourchette is torn through in 61 per cent. of all cases; while in 34 per cent. of primiparæ and 9 per cent. of multiparæ the perineum is lacerated to a greater or less degree. The causes of these lacerations are variable, and the percentage of injuries may be somewhat decreased by judicious care in the management of labor, but with all possible care there will still occur a large percentage of injuries. Since we can not always prevent these injuries and because the correct position of a normal uterus, vagina, rectum, bladder and urethra depends greatly on the integrity of the pelvic floor, we should exercise the greatest possible care to restore these parts when lacerated as nearly as possible to the normal condition. The point which I wish to emphasize is the great tendency on the part of physicians in general to neglect the repair of these injuries.

The proper time for the repair of a torn perineum is immediately after delivery. The simple fact of a perineal tear being slight is not sufficient excuse for allowing the damage to go unremedied. When a laceration extends beyond the fourchette, the physician who fails to recognize its existence and to insist on its repair is guilty of gross neglect of duty. The patient and her friends may at first object to this procedure, but, as a rule, all objections can be removed by a simple and brief explanation of the existing condition, the necessary steps to be taken in repair, and the serious results that follow its neglect. The operation is so simple, and the results obtained so uniformly successful, that even the novice in surgery need have no fear of the outcome. The only instruments needed in an ordinary case are a curved needle set on a handle and a few strands of silkworm gut. No anesthetic is necessary, as the parts are already numb from the severe stretching and the pressure to which they have been subjected. If the patient is in an exhausted condition from a prolonged labor, or if the light is poor, the operation may be delayed for a brief period and the primary operation still done any time within the first twenty-four hours. If there is still some contraindication for disturbing the patient, an intermediate operation may be done at the end of five or six days by the use of a 10 per cent. cocain solution. No patient should be allowed to go on until a secondary operation is necessary to remedy the injury, for it is in those cases calling for secondary measures that the ill effects of perineal lacerations are seen, not on the pelvic organs alone, but on the general constitution of the patient.

The first evil effects observed as a result of the removal of perineal support is prolapse of the vagina, which is sometimes followed by prolapse of the rectum, with its resulting constipation and the consequent constitutional derangement. Occasionally inflammation and

* Read before the Marion County Medical Society, 1905.

ulceration of the rectal pouch may be seen as a result of fecal accumulations. Following a rectocele or occuring simultaneously with it there may also be a cystocele, with inability entirely to empty the bladder; the decomposition of the residual urine frequently resulting in a very troublesome cystitis.

The most important result following this injury to the pelvic floor is prolapse of the uterus, which, through dragging on the ovaries and tubes, results in more debilitated and neurasthenic conditions among women than at first would be imagined by a casual observer. What physician has not had patients apply to him for treatment, who complained of that characteristic backache, that indescribable weakness of the legs and feeling of pelvic weight or "bearing down," and that extremely prostrating headache to such a degree that her life is rendered almost useless. On physical examination, the patient is found to present most, or perhaps all, the conditions previously enumerated. When we reflect for a moment that with the expenditure of 15 or 20 minutes' time and a very small amount of trouble on the part of the physician immediately after the completion of labor, the patient might have been spared all these ills and their consequences, and her life instead of being that of a semi-invalid might have been one of health and vigor, it is clearly evident that the profession has not laid enough stress on the importance of the repair of perineal injuries.

Since the trend of modern medicine and surgery seems to be directed more toward the prevention than the cure of human ills, it seems fitting that perineal injuries should receive due consideration as a prophylactic measure against the ills that are sure to follow their neglect.

Special Article

IMMUNITY.

CHAPTER XX.

TETANUS.

In 1884 Carle and Rattone demonstrated the infectiousness of tetanus by inoculating the pus from an infected wound into rabbits; 11 out of the 12 inoculated rabbits died of tetanus. In 1885 the bacillus was discovered by Nicolaier, and Kitasato cultivated it artificially in 1889.

Characteristics of the Micro-organism.

The organism is rather long and slender (2 to 4 microns long, 0.3 to 0.5 microns broad), possesses many flagellæ and has a small amount of motility. It stains readily with the ordinary anilin dyes and by Gram's method. In young cultures isolated cells and threads predominate, but after a few days spore formation begins; eventually all the adult cells degenerate and the culture consists entirely of spores. The spores have a larger diameter than the bacillus, are situated at one end of the cell and give the latter the characteristic "drumstick" form. The organism is a strict anaërobe and is obtained in pure culture with some difficulty. Morphologically it is difficult to distinguish from the bacilli of malignant edema and symptomatic anthrax.

Habitat.

Few organisms are distributed more widely and generously than the bacillus of tetanus. It is most abundant in street dirt and in tilled ground which has been fertilized with manure. Nicolaier found it in twelve out of eighteen samples of earth. It is less abundant in timber land. Such a distribution is easily accounted for, since the bacillus seems normally to be an inhabitant of the intestinal tract of the horse, cow and sheep, and is often found in that of man and other animals. It occurs on dirty clothing and readily gains access to dwellings with dust in which it may be blown and carried about. Tetanus has developed in gunshot wounds in which dirty clothing was carried into the tissue, and several instances of house tetanus have been noted, i. e., cases in which several individuals in the same dwelling have contracted the disease following injury. The organism has been found even in sea water. Certain localities appear to be heavily infected. In certain tropical districts a large percentage of the new born die of tetanus neonatorum, and puerperal tetanus has prevailed alarmingly in Bombay. It has been suggested that the custom of bleaching the linen on the ground may be responsible for the prevalence of the disease in these localities, but the general lack of surgical precautions is probably of greater importance. The disease has decreased in these localities under aseptic practices. Tetanus has resulted from the injection of impure gelatin for hemostatic purposes. The ability of the bacillus to proliferate outside the animal body has not been determined. Some observers hold that it exists as a vegetative organism only in the intestinal tract of animals, but the possibility of proliferation in soil is by no means excluded, particularly since it is so often found in association with organisms which are known to favor its growth. When incrusted in solid material and accompanied by suitable saprophytes it may readily find the anaërobic conditions which are demanded for germination of the spores.

Resistance.

The spores are very resistant. In one instance they remained virulent for eleven years on a splinter of wood. They may be killed in six days by direct sunlight. In comparison with non-spore-forming organisms they are very resistant to antiseptics. Kitasato found that they were killed in five minutes by steam, in fifteen hours by 5 per cent. carbolic acid, in two hours by 5 per cent. carbolic acid to which 0.5 per cent. of hydrochloric acid was added, in three hours by 1/1000 corrosive sublimate and in thirty minutes by the same solution to which 0.5 per cent. hydrochloric acid had been added.

Pathogenesis.

Tetanus is conspicuously a wound infection and that it develops so frequently from wounds which are contaminated with earth is readily understood from the distribution of the organisms as cited above. Considering, however, the great number of such wounds and the prevalence of the bacillus, the rarity of the disease is remarkable. In explanation of this fact investigations have shown that the organism is not a vigorous parasite, that it often demands special conditions for its development in the tissues. According to Vaillard and Rouget, the spores when washed free of toxin do not cause tetanus; they are taken up and destroyed by leucocytes. The bacillus, furthermore, is a strict anaërobe, demanding for its development a wound from which the air is largely excluded. It is well known clinically that penetrating wounds in which infected material is carried beneath the fasciæ, as the rusty nail wounds and those accompanied by deep lacerations such as wounds inflicted with blank cartridges, or those in which dirt and micro-organisms have been ground into the tissues, as in crushing injuries, are prone to be followed by tetanus.

Adjuvant Conditions.

Of equal importance is the presence of foreign matter and particularly of other micro-organisms. Relatively superficial wounds in which there is laceration of the tissue with consequent necrosis, as in wounds by toy pistols, even the paper-cap pistol, are well adapted for the development of tetanus if the germs were on the skin at the time of injury. Necrotic tissue favors the proliferation of the tetanus bacillus in two ways. In the first place it seals up the wound to a certain extent, and thus provides the requisite anaërobic condition; in the second place it would seem to prevent phagocytosis of the bacilli in some obscure way. It has been suggested that the strong, chemotactic relation which exists between necrotic material and leucocytes causes the latter to take up the dead tissue rather than the bacilli. That innocent foreign material may favor the development of tetanus in the presence of the microbes was shown by Vaillard and Rouget; tetanus would develop in the presence of an artificially produced hematoma or a subcutaneous fracture while in the absence of such predisposing factors the bacilli were taken up by phagocytes. It

is probable that saprophytic organisms and the pus-producing cocci which are usually found in wounds contaminated with earth favor the development of tetanus. Some of them increase the virulence of the tetanus bacillus in culture media. Aërobic organisms may facilitate development of the bacilli by consuming local oxygen.

Mixed Infections.

Our great harvest of tetanus following Fourth of July injuries is closely associated in the first place with the warm, dry season in which the bacilli are more readily disseminated with dust, and in the second place with the nature of the wound and mixed infections as described above.

Occasionally tetanus follows the simplest wounds, which may have healed entirely before symptoms develop. There is an advantage in keeping suspicious wounds exposed to the air. In "idiopathic tetanus" the seat of infection can not be determined. In the so-called "tetanus rheumaticus" which follows exposure to cold, the infection atrium is unknown; a latent infection which is stirred into activity by the reduction of resistance which often follows exposure may be present. Avirulent tetanus bacilli (?) were cultivated from the lungs of one such patient. Neither the bacillus nor the toxin penetrates the unbroken skin or mucous membrane. The toxin is digested by the gastric and pancreatic juices. Wounds of the mucous surfaces may constitute infection atria; tetanus has followed diphtheria and typhoid fever.

The pathogenic properties of the tetanus bacillus reside in its soluble toxins, of which two, tetanospasmin and tetanolysin, are known. The characteristic nervous phenomena of the infection depend on the action of the former, whereas the latter, a hemolytic toxin, is of minor importance. As in diphtheria, a systemic distribution of the bacilli is not necessary for the development of the disease, the toxin being produced by the organisms in the wound, whence it is carried to the nervous tissue by way of the lymphatics. Particularly in mixed infections tetanus bacilli may be carried to neighboring lymphatic glands and eventually reach the circulation; pure cultures have been obtained from the heart's blood in experimental work. The blood, on account of its content in oxygen, is thought to be unfavorable for the growth of the organism.

The incubation period varies from two or three days to several weeks. In the statistics of Rose 20 per cent. of the cases showed symptoms in the first week, 45 per cent. in the second, and about 30 per cent. in the third or fourth weeks. The shorter the incubation period the more fatal the disease. In the statistics cited the mortality with short incubation was 91 per cent.; when the incubation period was moderate it was 81.3 per cent., and when prolonged, 52.9 per cent. The nearer the infection atrium is to the central nervous system the shorter is the incubation period; "head tetanus" develops quickly.

Period of Incubation.

Tetanus toxin (tetanospasmin) has a very strong affinity for the nervous tissue of susceptible animals. This may be demonstrated in test-tube experiments in which the toxin is mixed with an emulsion of the nervous tissue; the nervous tissue neutralizes the toxin more or less completely, as determined by subsequent inoculations of the mixture (Wasserman's experiment). It is held by certain authorities that the toxin attacks only the nervous tissue in man; in some of the lower animals, however, various organs, especially the liver, have an affinity for the toxin.

Tetanospasmin.

The method by which tetanus toxin reaches the central nervous system has been the subject of much speculation and experimentation. Recent observations by Marie and Morax and by Ransom and Meyer show with a great degree of probability that it is absorbed by the end organs of the motor nerves and from there passes to the ganglionic cells through the axis cylinders. This absorption takes place very quickly; when the toxin is given intravenously it disappears from the blood in the course of minutes. It has been found in the nerves within an hour and a half after subcutaneous injection. Its further transmission centrally occupies more time and, indeed, the investigators mentioned explain the rather long incubation period of the disease on the basis of the time required for this transmission. The brief incubation period in "head tetanus," accordingly, would depend on the short distance the toxin is obliged to travel to reach the ganglionic cells.

Although the toxin appears not to be taken up by the sensory nerves, a painful form of the disease, tetanus dolorosa (Meyer), may be produced experimentally by injecting the toxin into the posterior roots of the spinal nerves. Roux caused "cerebral tetanus" by introducing the toxin into the cerebral tissue; the condition is characterized by absence of contractures. "Local tetanus," in which the muscles in the vicinity of infection or inoculation are involved in contractures, is the first symptom of tetanus in experiment animals; it rarely occurs in man except in head tetanus. The phenomenon depends on the fact that the toxin, being transmitted through the motor nerves, reaches first the ganglionic cells which correspond to the infected area.

Varieties of Tetanus.

Just before death the toxin has been demonstrated in the blood of man by injecting some of the serum into mice. Its excretion in the urine is questionable. Tetanus produces no characteristic anatomic changes although degenerative lesions in the ganglionic cells occur. Death usually occurs from asphyxia caused by contractions of the diaphragm, or muscles of the glottis, or from cardiac failure. In some instances the blood has been found more or less laked because of the action of the tetanolysin.

According to Metchnikoff, the only natural immunity which man possesses to tetanus is leucocytic and this may be sufficient to protect under favorable conditions. The observations of Vaillard and Rouget support this claim. Susceptibility depends not only on the presence of suitable receptors in the nervous tissue, but also on the degree of affinity which exists between these receptors and the toxin. In man and some animals this affinity is very great, whereas in fowls it is weak and an enormous amount of toxin is required to cause tetanus. A further proof of this weak affinity in non-susceptible animals rests in the fact that the toxin when injected into the blood remains unabsorbed for a long time, whereas in susceptible animals it disappears very quickly. As indicated in Chapter XVIII, the presence of suitable receptors in less vital organs may be a cause of natural resistance. Acquired immunity depends on the presence of antitoxin in the circulation.

Natural Immunity in Man.

Tetanus antitoxin is a thorough prophylactic. This fact has been heralded so extensively in recent years that there can be little excuse for ignorance on the part of any physician. At the same time, the returns from the "Fourth" show that the principle is not yet deeply imbedded in the medical mind. It is quite certain that a large percentage of these fatalities could be prevented by two injections of antitetanic serum, one at the time of injury and a second from five to eight days later. An epidemic of puerperal tetanus in an obstetric ward in Prague was checked by prophylactic injections of the antitoxin. In a certain section of France 4,000 horses, with injuries commonly followed by tetanus, received antitoxin and none developed the disease.

Value of Antitoxin.

No degree of efficacy on the part of the antitoxin, however, justifies disregard of the surgical care which the wound demands. From the facts cited it is clear that thorough and frequent disinfection of the wound, free drainage, the removal of all foreign and necrotic material, and the access of air are measures of eminent importance. Punctured wounds should be opened up. Antitoxin, preferably as a powder, may be used in the wound, and the serum infiltrated into the adjacent tissue.

The principles which apparently underly the ill success of the antitoxin as a curative agent were treated of in Chapter XVIII. Its administration as early as possible after symptoms have appeared is demanded. After symptoms have existed more than thirty hours Behring maintains that there is no hope of cure by the subcutaneous route. Inasmuch as forty hours or more are required for complete absorption from the subcutaneous tissue, intravascular injection of at least the first dose would seem to be indicated. Yet by neither of these methods is the most essential end accomplished, for the antitoxin does not reach the nerves nor can it be recognized in

the cerebrospinal fluid in conspicuous quantities. The most that such injections accomplish is the neutralization of the circulating toxin, that which is not yet on its way to the central nervous system through the motor nerves. It is, of course, important to neutralize the circulating toxin and it must be done quickly, for in the course of a few hours the fatal quantity of toxin may have been absorbed; "a dose of antitoxin which would save in the morning may be without effect in the evening."

At the same time it is of greater immediate importance to neutralize that which has been already taken up by the nervous tissue, and if possible to tear away some of the toxin already bound by the ganglionic cells. To accomplish this object, or to attempt it, special procedures are demanded. We may then consider the antitoxic treatment as follows:

Method of Using the Antitoxin.

First: The neutralization of the toxin which has already been absorbed by the peripheral nerves and spinal cord at a point as near the vital centers as possible. This involves surgical exposure of the large nerves of the part as near the trunk as possible and their infiltration with antitoxin (Ransom and Meyer), and in desperate cases the infiltration of the antitoxin into the spinal cord in the vicinity of the medullary centers. From five to fifteen minims may be injected into the nerve trunks at a sitting, and the operation may be repeated on subsequent days; the needle should be partially withdrawn and reinserted in different directions during the injection. Rogers[1] recommends tying loose ligatures around the nerves after the operation so that they may be readily drawn up and identified for further injections. In order to reach the medulla the intracerebral method of Roux or that of Rogers may be utilized. Kocher has devised a technic for the intracerebral injections. Anterior to the parieto-frontal suture and to one side of the median line the scalp is prepared, and a hole drilled through the skin and skull, having its direction toward the foramen magnum. By means of a long needle, the ventricle is penetrated and the serum, after injection, finds its way to the fourth ventricle to the imperiled respiratory and cardiac centers; 10 c.c. may be injected. Rogers seeks to accomplish the same end by a different technic. He introduces the needle between the sixth and seventh cervical vertebræ, punctures the cord deeply, and injects from 20 to 30 minims at a sitting. Although there is danger of intraspinal hemorrhage in the procedure, no ill effects were noted. It has been recommended also that the cerebrospinal fluid be withdrawn by means of lumbar puncture and substituted by antitoxin. Some physicians who have used this method report favorable results.

Second: The neutralization of all toxin which is not yet bound by the nervous tissue or absorbed by the motor nerves. This demands the infiltration of the wound and surrounding tissue with the antitoxin, and injection of a sufficient amount of the serum into the circulation in order that circulating toxin may be neutralized. The intraneural, intraspinal or intracerebral injections should always be supplemented by subcutaneous or intravascular injections. The first dose should be given intravenously, whereas subsequent injections may be given subcutaneously. The injections should always be repeated.

Unfortunately, tetanus antitoxin is not standardized by American manufacturers and dosage can not be controlled with any accuracy. Although standardization can not be accomplished with the same degree of accuracy as in the case of diphtheria antitoxin, its approximate value can be determined (within 5 or 6 per cent.), which is sufficient for practical purposes. The antitetanic serums of Behring, Tizzoni and the Pasteur Institute are all standardized, but on somewhat different bases. Behring advises the administration of 20 units of his serum for prophylactic purposes, and 100 units as the "simple" curative dose when given soon after the development of symptoms.

Standardization of Antitoxin.

Not less than 10 c.c. of American serum should be given for prophylaxis, and the dose should be repeated. No definite limits can be given as to the amount which may reasonably be given for curative purposes. Ten cubic centimeters given intravenously at once, and an equal amount subcutaneously on subsequent days, would seem to be sufficient to neutralize the unbound toxin if the serum has reasonable strength. Standardized serums certainly are to be preferred.

Agglutination has no practical significance for diagnostic purposes. An agglutinating power has been noted in the serum on the eighth day. Agglutinins may be produced by immunizing animals (rabbits) either with the bacilli or the toxin. In the latter case the formation of the agglutinin is due to the presence of agglutinogenic receptors in the toxin solution.

1. "The Treatment of Tetatnus by Intraneural and Intraspinal Injections of Antitoxin," Rogers. THE JOURNAL, July 1, 1905.

New Instrument

AN IMPROVED NEEDLE HOLDER.

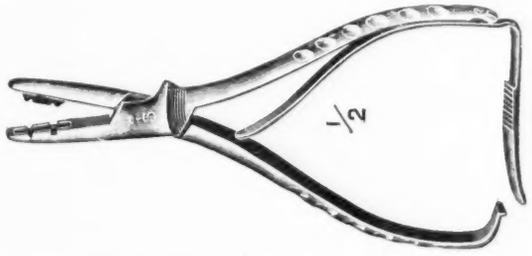
NORMAN BARNESBY, M.D.

NEW YORK CITY.

The needle holders now on the market are by no means perfect and, while I understand fully that my new device will be criticised, I feel that some members of the profession will appreciate its advantages and use it in preference to any previous instruments.

A matter of common complaint is that the holders known as the "Harris," "Emmett," "improved Russian," "Ferguson," "Halstead," "Hagedorn," "Byford," "Henchett," "Whiting," "Rhenier," "Abbe," do not come up to expectations and that great annoyance is caused during their use. Some of the above holders are useful for certain needles, but not one can be relied on to hold properly every kind of needle.

The needle holders which lock with a firm grasp and unlock when more pressure is used are very poor. I have a number of times broken needles, while they were in the tissues, by trying to unlock the holders, which is very unpleasant.



The accompanying cut shows my holder. Its advantages are:

1. It can be used with or without the clasp.

2. The fine ratchet-like clasp assures gradual pressure on needles, absolutely preventing them, no matter how fine, from breaking.

3. Hagedorn or any other kind of needle can be used in the V and square notch, while the two V notches are perfectly adapted to Hagedorn's.

4. Near the top of the handle there is a flange which is used as a support for thumb or finger. During the insertion of a needle, if the instrument and hand are wet, this flange will be found of great assistance in preventing the holder from slipping and will insure a firm hold.

Medicine and morals are inextricably intertwined. The immoral physician is foredoomed to failure. Let this axiom be clearly sounded from every chair in every medical college in the country. Whoever would be a successful physician must be a teacher and practitioner of morality—not necessarily by word of mouth—there are already too many such moralists—but by influence and conduct. He must persistently and consistently frown on immorality, because immorality *per se* is a powerful—perhaps, the most powerful—etiologic factor in a pathologic condition of mind and body which is pledged to combat and uproot.—*Medical Standard.*

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ACTION OF COPPER AND ITS SALTS ON ORGANISMS.

Last year Drs. Moore and Kellerman[1] of the Bureau of Plant Industry, U. S. Department of Agriculture, made the important discovery that copper and its salts in very high dilutions are very efficient in killing green algæ and also various kinds of bacteria. Since that time a large amount of work has been done, especially in relation to water supplies, in order to test the accuracy of their claims and in practically every instance their results have been substantiated. Last summer in New York City, the ponds in the parks were treated with copper sulphate by rowing a boat from which bags of the salt were suspended in the water. The small amount of copper thus passing into solution was found very efficient in removing the foul smelling green scum which collects in the ponds, without interefering in any way with the growth of the higher desirable plants.

It has also been shown that certain kinds of bacteria, particularly those of the intestinal tract, are especially sensitive to copper and its salts. This fact indicates the significance of this discovery to sanitary science and to engineering problems concerned with water supplies.

Recently Pennington, Gildersleeve and Stewart[2] of Philadelphia have published reports of their investigations on the bactericidal action of copper and its compounds, especially with reference to the typhoid-colon group. From these studies, we learn that typhoid bacilli are very sensitive to extremely small amounts of copper, 1 part of the sulphate in 2,000,000 parts of water being sufficient to kill them in 10 hours. The *B. coli communis* and *B. dysenteriæ* are slightly more resistant. Of the copper salts, the sulphate has the greatest bactericidal action, this being due probably to its higher degree of dissociation. Solutions of colloidal copper, by which is meant copper dissolved from a bright copper surface when placed in water, are also found to be very efficient, even more so than the salts. Stewart found, for instance, that in a one-liter copper vessel 1 part of copper to 4,000,000 parts of water was dissolved in three hours and this amount of copper was sufficient to kill the added typhoid organisms in from one and three-quarters to two and one-half hours. Therefore, in a typhoid epidemic it would seem that water could be made safe by allowing it to stand for three hours in a copper vessel whose inner surface was polished. There is no evidence to indicate that copper in such amounts would have any effect whatever when taken into the human system.

Water in reservoirs easily can be made safe by such treatment with copper. As Jackson[3] reported before the New York section of the American Chemical Society, the sulphate in dilution 1-8,000,000 administered once or twice a year is sufficient to prevent all trouble from microscopic growths, and this dilution is so great that in order to obtain a medicinal dose it would be necessary to drink 40 gallons a day. If this method can be applied successfully to the sources of water supply certainly a very desirable result would be obtained.

Attention should be called to the fact, as Gildersleeve has pointed out, that sanitarians who are interested in this work do not advocate its use to the exclusion of other methods, such as filtration; but it may be a valuable method to use in conjunction with these if for any reason they may at any time become inefficient. Or the methods may be combined during periods of typhoid epidemics.

Perhaps a word should be said about the possibility of chronic poisoning from copper used in this way. Apparently at present insufficient evidence exists from which to draw any reliable conclusions with respect to this point, and it may require careful observations extending over a long period of time to settle this question. In the meantime the possibility should be kept in mind and proper precautions taken.

1. Bull. No. 64, Bureau of Plant Industry.
2. Amer. Jour. Med. Sciences, May, 1905.
3. Science, Dec. 9, 1904.

PRESIDENT ROOSEVELT ON THE PHYSICIAN.

President Roosevelt's address before the Associated Physicians of Long Island will bear more detailed comment than we gave to it last week. What he said of the medical profession is a decided tribute. He said that "the condition precedent on success in digging the Panama canal is having the proper type of medical work as a preliminary." He spoke of the physician's character in a most appreciative way. He said among other things: "The doctor has on the one hand to be the most thoroughly educated man in applied science that there is in the country, and on the other hand the doctor gradually becomes the closest friend to more different people than would be possible in any other profession." At considerable length, the President showed that he appreciates the duties, difficulties and opportunities of the scientific physician.

Referring to the task at Panama, he indicated the dependence that must be placed on medical science to make the conditions of work such that the engineers can accomplish their task. We echo his confidence that the conditions hostile to health are going to be controlled by the sanitary authorities. The alarmist stories brought by a few panic stricken individuals must be received at their true value. The fact is that the rainy season is never a favorable one for sanitary work in the

tropics and, further, we are still suffering to some extent, it is probable, from the dilatory and red tape methods which were denounced by Dr. Reed. If Dr. Gorgas could have had full swing from the first we may safely assume that matters would be better now, as we feel sure they will be soon. There will be difficulty, especially on the Atlantic side of the isthmus, in controlling the mosquito pest, but what has been done in other tropical countries, the confederated Malay states for example, can be accomplished even there. We feel satisfied that the sanitary authorities on the isthmus will do their full duty if untrammelled and that the health results will be commensurate.

In expressing his confidence in the ultimate results at Panama, the President recalled the splendid example of Cuba, and paid a well-earned tribute to the effective work there of Leonard Wood. In this connection his words of resentment at the criticism to which Wood has been subjected were keen. "There has been no meaner and more unpleasant manifestation in all our public history than the feelings of envy and jealousy manifested toward Wood." And then came a sentence pregnant with sad thought for the men of medicine—"and the foul assaults and attacks made on him, gentlemen, were largely because they grudged the fact that this admirable military officer should have been a doctor." It is to be feared that there is herein too much truth. Why a physician should be grudged military or civil success it is not easy to reason out, but the fact seems real. Perhaps it is a popular inheritance from past ages, when medicine was not a science and when physicians were enmeshed in superstition. To what else can such prejudice be laid? Certainly the educated medical man of the present affords no excuse for such a view of his efforts. However, we need not heed it. Constantly, as we improve ourselves in education and fitness, our position is advancing. The physician of the future again will be, in a rational way, the arbiter of men's fortunes. The very words of the President are a step forward and we should be grateful to him, not for seeing our plight, but for speaking loudly his dissent from the too-prevalent anti-medical prejudice. Surely, though slowly, we are moving forward, and for every aid are grateful. Not least among our friends and appreciators stands Theodore Roosevelt.

PREMONITORY STAGE OF BRIGHT'S DISEASE.

One of the most interesting developments in the modern knowledge of disease has been the recognition of the fact that many affections formerly considered local are really general affections, with local manifestations. While typhoid fever to a certain extent deserves the old name of enteric fever, because of the frequency with which ulcers are found in the intestines, a febrile affection due to the presence of the typhoid bacillus in the human system may run its course without any intestinal manifestations at all. This is particularly true in certain cases in which there seems to be a true typhoid process in the gall bladder without intestinal lesions. This same set of events may occur with the pneumococcus, which usually produces definite pulmonary pathologic conditions, but may cause only other organic symptoms. Even pneumonia itself does not depend for its prognosis so much on the pathologic condition in the lungs as on the effect produced on the rest of the system by the presence of the toxins of the pneumococcus in the circulation.

It is not surprising, then, to find that there is coming to be a definite acceptance of the idea that the nephritis of Bright's disease by no means constitutes the essence of the affection described by the great English clinician at the beginning of the nineteenth century, but that the kidney affection is only a local manifestation of a systemic condition which has existed for some time previously until an involvement of the kidneys has been produced. At the present time the diagnosis of tuberculosis has advanced to a stage where the presence of a pulmonary affection would scarcely have been suspected a few years ago. The so-called pre-tuberculous stage of the older writers is now recognized to have been really the incipiency of the lung affection. In recent years not a few clinicians have insisted that a preliminary stage of Bright's disease, in which a high-tension pulse and an overacting heart with emphasized second sounds are the principal symptoms, has been possible of recognition by the careful observer. There seems to be a growing persuasion that this so-called preliminary stage is really the initial condition of Bright's disease, in which, though there are no symptoms of nephritis, the stage of preparation for the kidney degeneration so sure to ensue, is already well under way.

This definite acceptance of the possibility of recognizing very early stages of serious affections constitutes the most hopeful element for their favorable treatment. When tuberculosis was recognized only at advanced stages, treatment was practically hopeless, and the disease came to be considered as almost inevitably fatal. If Bright's disease be recognized only when there are serious signs of kidney degeneration to be found in the urine, then the disease necessarily runs a fatal course. If, as is claimed, it can be definitely diagnosed or at least reasonably suspected at a much earlier stage, then treatment, as in the case of tuberculosis, will doubtless prove much more helpful. There is no doubt that the toxic materials which produce the condition of irritation that leads to the contraction of arterioles, and to the consequent raising of blood pressure, find their way into the system from the digestive tract. It is not surprising that it is particularly the organs which have terminal end arteries, the kidneys and the brain, together with the retina, which is after all practically a portion of the brain, that suffer most from this increased blood pressure and from the presence of toxins.

Absolute intestinal antisepsis is impossible, but there

is no doubt but that great improvement in the matter of obnoxious intestinal flora can be brought about by attention to diet. In cases in which there is a distinct tendency to increase of blood pressure, and in which the patient complains of a tendency to palpitation evidently something more than nervous in origin, the suspicion of this preliminary stage of Bright's disease should be entertained and treatment undertaken with the definite idea of decreasing the irritative factors that are at work. It has been evident for some time that the kidney symptoms are ordinarily not the most important, especially in the beginning of the disease. Hence the mystery that has surrounded the prognosis of these cases. Men refused life insurance because of kidney symptoms, that apparently pointed to Bright's disease, live for twenty-five or thirty years in excellent health. On the other hand, men with no kidney symptoms, or with symptoms so slight that there is question at most of a little physiologic albuminuria, are accepted and die within a few years. It is evident that there is great possibility of very practical increase in our knowledge of Bright's disease in the study of these initial cases. The watchword of our generation in all the chronic affections must be the recognition and treatment of the preliminary stage of the affection.

MEDICAL DEFENSE AND MALPRACTICE INSURANCE.

It is stated in *The Western Underwriter* that the attorney-general of Minnesota has received from the Physicians' Defense Association of Minnesota a complaint against those casualty companies that write a defense policy which includes in its benefits reimbursement for damages, as well as for costs of defense. This point recently has been mentioned several times in our columns.[1] In opposition to the more liberal contracts, it is alleged that they in reality nullify all laws providing a penalty for malpractice, and that they enable those so inclined to conduct an illegal practice without fear of punishment. The question is of some importance, and a decision in the Minnesota case will be awaited with interest.

DO WE CODDLE THE HEART?

A London doctor has recently been giving a warning against coddling the heart. If properly quoted in the press dispatches, Dr. Goodhart (auspicious name) says that he knows of no symptoms of a weak heart and that the use of the term leads to a nervous dread from which recovery is difficult or to an enervating, luxurious life of idleness which causes results tending toward the end that it was intended to prevent. The idea of cardiac muscular deficiencies has been pretty well preached during the past few years. Although there is no doubt that the weak heart notion has been sometimes carried too far and that the expression may be occasionally misleading, it would require the testimony of many good authorities to oust it from the medical mind at the present time.

1. In this connection, see also a letter on the subject in the Correspondence Department of this issue.

THE DOSAGE OF DIPHTHERIA ANTITOXIN.

One who has followed the literature bearing on the use of diphtheria antitoxin must be struck by the divergence of opinion and practice characterizing the American and European authorities. In the United States great weight is attached to the potency of antidiphtheritic serum measured in specific antitoxin units, and among the producers of this remedial agent a sharp rivalry exists, with the object of obtaining the greatest possible potency in the least possible quantity of serum. This commercial strife for the production of extrapotent antitoxin, for which only an occasional horse can be found adaptable after a laborious and expensive process, and the premium placed on the antitoxin unit *per se*, have resulted in relatively high prices for the diphtheria remedy as prepared and marketed in the United States, and corresponding misunderstanding and dissatisfaction on the part of physicians, particularly those preferring to employ quantitatively larger doses of the serum. In Europe less stress is laid on the attainment of a superlative degree of concentration, and, while approximately the same number of antitoxin units are prescribed, a larger quantity of serum is administered. Whether the practice of our foreign confrères is sanctioned by scientific knowledge is difficult to determine, but it is certain that a reaction in favor of more massive doses of the diphtheria curative serum has begun in this country, seemingly based on the clinical experience of good observers. This tendency was strikingly in evidence during a lively discussion on the treatment of diphtheria at the meeting of the Ohio State Pediatric Society, in Columbus, May 9, 1905. More recently Louis Fischer[1] has recorded a similar opinion, based on his personal observation and on a study of the statistics of the Willard Parker Hospital. He recommends a dose of from 10 to 20 c.c. of serum, and uses one of medium potency. With these larger doses of antitoxin Fischer claims that the mortality is always lower than when smaller amounts are employed. At the bedside, therefore, the clinician has apparently learned what certain laboratory workers have long believed, viz., that there resides in the serum of the diphtheria-immunized horse, besides the specific antibody of diphtheria, some substance important from the curative standpoint; and for the proper effect of this substance, which apparently does not attain a high degree of concentration even in the antitoxic sera richest in the specific diphtheria antibody, a bulk of serum larger than that customarily employed in this country is required.

THE FATE OF PATHOGENIC BACTERIA IN BURIED CADAVERS.

In the prebacterial periods, more or less fear of infection from graveyards existed. Even to this day one occasionally hears the opinion expressed by medical men that burial underground as ordinarily performed is an insanitary method of disposal of the dead. While no disinfectant is equal to fire in prompt destruction of infectious material, yet all experimental and other investigations show conclusively that pathogenic mi-

1. New York Med. Jour., June 17, 1905.

crobes rapidly disappear as cadavers undergo decomposition after burial; furthermore, no evidence has been obtained to show that the numerous infectious organisms contained in dead bodies, human and animal, pass into the soil surrounding properly made graves in reasonably dry soil. Cholera and pest bacteria are not demonstrable after from seven to thirty days at the outside after burial in cadavers of patients who have died from either of these diseases. Typhoid bacilli are not found in bodies of typhoid fever patients buried for three months.[1] Tubercle bacilli may persist somewhat longer, and Schottelius claims to have demonstrated virulent tubercle bacilli in bodies buried between one and two years. Diphtheria bacilli, pyogenic organisms, tetanus and anthrax bacilli all have been found to disappear in from a few days to two months or so. The remains of rabid animals lose their infectious powers in from two to five weeks after burial. The only organisms that possibly might infect the adjacent earth in case of improper burial are anthrax bacilli and tetanus bacilli, which then would assume the spore forms. In this country, in which it is becoming more and more customary to inject dead human bodies with formalin solutions, it is probable that considerable direct destruction of bacteria is accomplished through the action of the formalin. As decomposition advances in cadavers, the pathogenic forms are crowded out by the saprophytes. Proper burial in ground suitable for the purpose, i. e., not swampy and draining directly into water supply, consequently can not be regarded as a procedure that merits condemnation because grossly insanitary.

1. Petri, Klein.

YELLOW JACK ON AMERICAN SOIL.

An outbreak of yellow fever has occurred in New Orleans, chiefly among some Italian fruit handlers. Up to July 26 there had been 154 cases, with 34 deaths. It is with pleasure we record the fact that the local authorities and the United States Public Health and Marine-Hospital Service are working in perfect accord in their energetic efforts to stamp out the focus of infection, which appears to have slipped in quite unobserved from some Central American fruit steamer. At first all the cases were among Italians in the French quarter of the city, though on July 25 new cases were reported outside of the limits of the original outbreak. Of course the usual crop of quarantines has appeared among the gulf communities, but it is hoped that the rigors of former epidemics will not become necessary. An odd and wholly unprecedented feature of this outbreak is that Havana —once the fountain of all our yellow fever troubles —has instituted a quarantine against our own port of New Orleans. For the first time yellow fever on American soil will be fought on the basis of mosquito conveyance, and it is agreeable to learn that all the authorities concerned have harmoniously decided on this course. Windows, cisterns and wells are to be screened, and at every point the villainous stegomyia will meet unexpected difficulties in the struggle for existence. We hope that this epidemic may show that yellow fever in America, when it occasionally sneaks in, can be made a matter of houses, or at most of blocks, and that hereafter it will not be necessary to restrict travel and to create discomfort and suffering by interurban and interstate quarantines. Should this prove to be the case, this little epidemic will not be without good result. Finally, it is the devout wish of every physician that all medical men concerned in exterminating or in keeping out the disease will present a unanimous front to this enemy of humanity. In some former epidemics the more or less rancorous discussions among our fellow physicians have been of no service to medicine. Now that exact scientific knowledge of the etiology of yellow fever has been attained, there is less excuse for differences of opinion while the disease is present. Fortunately, too, the spirit of professional harmony has made itself felt during late years. We may therefore, in some professional pride, anticipate a prompt extermination of the disease without any waste of effort in detrimental discussion.

TRAINING NURSES BY MAIL.

Our attention has been called to an advertisement in the latest issue of a very respectable publication, the *Review of Reviews,* of the Chicago Correspondence School of Nursing. It is headed "Be a nurse. You can if you will"—that is, of course, by instruction by mail. If there is any occupation requiring careful practical teaching and daily experience with the exigencies that arise as the main part of the instruction, it is that of nursing. The practical part of the training is the main thing. No amount of merely theoretical knowledge can properly fit a person for such an occupation. It seems to us very much like a money-making scheme on the part of its promoters designed to capture the dollars of unsuspicious females. The diploma of a correspondence nursing school would be a very unsatisfactory credential to a physician seeking the aid of a trained nurse in the many exacting and perilous emergencies that arise in medical and surgical practice, and if this fact was generally appreciated the advertisement ought to bring very little business. We hope this will be the case.

Medical News

ILLINOIS.

Hospital Out of Debt.—A subscription of $1,925, made on July 2, together with other donations, has placed the Canton Public Hospital free from debt.

Lawn Fete for Hospital.—The lawn fete given July 20 by the auxiliary association of St. Francis Hospital, Evanston, netted more than $1,000 for the charity fund of the institution.

Post Hospital Enlarged.—Work has commenced on an addition to the post hospital at Fort Sheridan, which will cost $19,000 and will contain two wards for contagious diseases with a capacity of 36 beds.

Personal.—Dr. Frank H. Kimball, Rockford, was badly bruised in a runaway accident July 13.——Dr. Charles H. Starkel, Belleville, has been appointed chief surgeon of the Southern Railway Company's line between Louisville and St. Louis.——Dr. Edward C. Park, Flora, was knocked down by a carriage July 7 and slightly injured.

Chicago.

Personal.—Drs. Alfred Murray, Harry Kahn and Frederick C. Eggert sailed for Europe July 25.——Dr. Louis J. Pritzker has returned from abroad.——Dr. Gustave J. Bergener has returned from Paris.——Dr. Truman W. Brophy sailed for

Europe July 25.——Dr. and Mrs. T. J. Robeson are spending a part of the summer at Fort Assinniboine, Mont.

Heat Causes Many Deaths.—As a result of the excessive heat of the first three days of last week the death rate for that period was the highest on record, equivalent to an annual mortality of 32.56 per 1,000.

Deaths of the Week.—During the week ending July 22 627 deaths were reported, 180 more than for the previous week and 89 more than for the corresponding week of 1904. Of these 188 were of infants less than a year old. Acute internal diseases caused 150 deaths; consumption 73; heat diseases, 57; violence, 47; pneumonia and Brights' disease, each 35, and sunstroke, 22.

Sanitaria for Babies.—Jackson Park Sanitarium for babies opened for the season July 14.——The Northwestern University Settlement at Augusta and Noble streets has opened accommodation for sick babies in the large, airy basement of the building, and in a tent pitched in front of the building, a trained nurse is in attendance, and the hospital is under the charge of Dr. William Butler.

INDIANA.

Incorporate Hospital.—The Joseph Eastman Hospital has been incorporated at Indianapolis, with a capital stock of $10,000, by Thomas B., Joseph Rilus, and Mary K. Eastman.

Hospital Dedicated.—The Reid Memorial Hospital, Richmond, erected at a cost of $80,000, of which Daniel G. Reid contributed $50,000 in memory of his wife and son, was dedicated July 27.

License Revoked.—The State Board of Medical Registration and Examination has revoked the license issued to Marie Sticler, Evansville, who is now serving a term of imprisonment for performing a criminal operation.

Conform to Standard.—The Fort Wayne College of Medicine has extended the term from seven to eight months to conform to the requirements of the American Medical College Association. Edward Mertz was elected professor of pharmacology; Dr. George W. McCaskey, professor of electrotherapeutics, and Dr. Alpheus P. Buchanan professor of dietetics.

Personal.—Dr. Irvin Lindenberger, resident physician at French Lick Springs, will move to Louisville about August 1. ——The office building and barn of Dr. John T. Freeland, Bedford, were damaged by fire to the extent of $600, July 11.——Dr. John H. Hurty, secretary of the State Board of Health, has been awarded a medal and diploma for his exhibit at the Louisiana Purchase Exposition.——Dr. William C. Prough, Goodland, has been adjudged insane and committed to Longcliffe asylum.

LOUISIANA.

Sanitarium Opened.—The Baton Rouge Sanitarium, erected by local physicians, was opened July 12.

Personal.—Dr. George A. B. Hays, superintendent of the Louisiana State Insane Asylum, Jackson, has been tendered the superintendency of the Pineville Asylum near Alexandria.

Hospital Fund Grows.—The building fund of the New Orleans Eye, Ear, Nose and Throat Hospital has now passed the $50,000-mark. On July 9 the subscriptions amounted to $50,744.09.

Increase Subscription.—On behalf of his mother, sisters, brothers and himself, Charles Godchaux has increased his subscription of $50,000 for the building fund of the new Touro Infirmary. It has been decided to name the central pavilion the Leon Godchaux Memorial Pavilion.

The Yellow Fever Situation.—On July 25 at 10 p. m., it was officially announced by the Louisiana State Board of Health, that there had been 154 suspected cases of yellow fever and 34 deaths reported up to that time.——Mississippi has declared a rigid quarantine against Louisiana.——Texas denies passengers from New Orleans the privilege of passing through the state under any conditions.——New Orleans is being cleaned and disinfected and made mosquito-proof.——Alabama has quarantined against Louisiana.——No fruit steamers less than six days out from Central American ports are to be allowed to land at New Orleans.——The state board has issued instructions that each suspicious case be reported and the isolated patient screened.——New Orleans has been quarantined from the rest of the state and business as well as travel is seriously interrupted. (See editorial.)

MARYLAND.

Baltimore.

Moale Left Large Estate.—The late Dr. William A. Moale left a personal estate of $250,000 besides a very large real estate amounting to several hundred thousand more. The whole is left in trust, the net income to be paid annually to his daughter.

Faculty Appointments.—The following appointments have been made at the University of Maryland School of Medicine: Daniel Base, Ph.D., professor of analytical chemistry; Arthur M. Shipley, M.D., associate professor of surgery; Summerfield B. Bond, M.D., clinical professor of genito-urinary diseases; James M. Craighill, M.D., Joseph E. Gichner, M.D., and A. Duvall Atkinson, M. D., clinical professors of medicine; Gordon Wilson, M.D., associate professor of clinical medicine; Richard Johnston, M.D., lecturer on diseases of nose and throat; Page Edmunds, M.D., instructor in genito-urinary diseases; Irving J. Spear, M.D., instructor in psychiatry; W. B. S. Levy, M.D., resident pathologist to the University Hospital.

Personal.—Dr. William S. Halstead received the honorary degree of Doctor of Laws at a special ceremony held at the University of Edinburgh July 22.——Dr. William Hewson Baltzell was received in audience by the Pope July 9. He will spend August in Switzerland.——E. B. Quillen has resigned the position of pathologist at University Hospital to accept an appointment as assistant surgeon in charge of the Atlantic Coast Line R. R. Hospital at Rocky Mount, N. C.——Dr. L. Wardlaw Miles has been appointed instructor in English in Princeton University.——Dr. C. W. McElfresh has returned from a visit to Rochester, Minn.——Dr. J. Williams Lord will spend the remainder of the summer at Lake George.——Dr. Guy L. Hunner is at Fisk Cottage, Chesterfield, N. H.——Dr. William S. Love is at Atlantic City.——Dr. Thomas Sudler, coroner of the Eastern district, who was overcome by the heat last week, is recovering.——Dr. I. R. Trimble is at Cape May.——Dr. William E. Moseley sailed for Bremen July 19. ——Dr. H. Clinton McSherry has lately returned to Baltimore after a prolonged residence in Switzerland and Southern France. He was operated on successfully for glaucoma before leaving Europe.

MINNESOTA.

Honor President-elect Mayo.—The physicians of Rochester, Minn., and the business men and other prominent citizens of that city and vicinity were highly gratified at the honor shown their fellow citizen, Dr. William J. Mayo, in his election as president-elect of the American Medical Association at the Portland session, July 11-14, 1905. A portrait of Dr. Mayo and a brief sketch of his life appeared in THE JOURNAL July 22, page 247. At a banquet in Rochester, Minn., tendered by the Commercial Club and the Merchants' Exchange on the evening of July 24, Dr. Mayo was the recipient of a handsome loving cup, a testimonial from neighbors and friends. The visiting physicians who happened at the time to be in attendance on the clinic, realizing the close association of Dr. Charles H. Mayo with his brother, took advantage of the occasion to present the former an elegant cut glass vase. Addresses were made by Dr. W. D. Haggard, Nashville, Tenn.; Dr. R. T. Edwards, Oakland City; Dr. C. M. Rosser, Dallas, Texas; Governor Johnson, St. Paul; United States Senator M. E. Clapp, Chief Justice C. M. Stuart, Hon. E. M. Weston, president of the Great Western R.R., and others. Dr. Rosser said in part:

> In relation to society the science of human healing stands supreme, and the profession throughout the world looks to America for leadership. To be President of the American Medical Association involves, therefore, the very highest personal honor, and reflects a credit on this community and commonwealth, otherwise impossible. Those familiar with the advanced character of work done by the Mayos found no surprise in the announcement that the elder brother had been accorded his recent distinction, which I take to be intended as a tribute to the worthiness of both.
>
> Nothing is more engaging than fraternal devotion, and nowhere has it been more beautifully exemplified than here in Rochester. As playmate brothers, as schoolboy chums without a quarrel, here on your streets, and in the country home near by, with equal ambition to excel in doing good, yet prone to self effacement, they have through patient labor as scientific twins, achieved a joint distinction, great as gratifying.
>
> But, my friends, the created is always at least sentimentally second to the creator, and if praise was the portion of him who could cause "two blades of grass to grow where only one had grown before," who shall set the limit of gratitude toward the now venerable father, whose early sacrifice and whose sagacity made the present happy condition a necessary following, and who retiring from the activity of a useful life, leaves in his stead two such sons.
>
> I propose the continued health and happiness of Dr. W. W. Mayo, the illustrious sire. May he exchange the terrestrial for the celestial some sweet day, but let him be a long time about it.

MISSOURI.

Sanitarium Locaters.—The commission to locate the state sanitarium for tuberculosis met at Jefferson City for organization, July 10, and elected the following officers: William Bayliss, Clarence, president; J. L. Eaton, Bismarck, vice-

president; Dr. L. Claude McElwee, treasurer, and W. D. Craig, Galena, secretary.

Personal.—Dr. George B. Thompson, Kansas City, coroner of Jackson County, while asleep, was robbed of $60 and a gold watch.——Dr. Vincil O. Williams, Bunceton, will succeed Dr. Charles B. Simcoe as assistant physician at the Nevada State Hospital, October 1.——Dr. Henry A. Schroeder, Braymer has been appointed surgeon for the Kansas City Laredo division of the St. Paul System.

St. Louis Health Commissioner Removed from Office.—Mayor Wells announced July 22 that he had sustained the charges filed against Health Commissioner Dr. John H. Simon. In accordance with these findings he removed him from office, and immediately appointed City Bacteriologist Dr. Charles A. Snodgras to act until September when the permanent appointment will be made by the city council. The temporary appointee, Dr. Snodgras, has been city bacteriologist during the past two years. In the trial of the charges against Dr. Simon, Dr. Snodgras was one of the principal witnesses against Simon, alleging, that in the municipal assembly he had hampered legislation of interest to the bacteriologic department, such as the passage of an appropriation for paying the wages of the stenographer and janitor of the bacteriologic laboratory. Dr. Simon denied this in rebuttal, showing by testimony of the speaker of the house of delegates that he had worked hard to have this legislation passed. Dr. Simon will resist the mayor's decision by appealing to the courts for an order of restraint to prevent his successor from taking office.

Skin and Cancer Hospital Opens.—On July 1 the St. Louis Skin and Cancer Hospital opened its doors for the reception of patients. This institution consists of a completely equipped hospital of forty beds, and an out-patient or dispensary service. Only skin and cancerous diseases are treated. The institution is founded on the research idea for cancer and allied types of malignant diseases. A pathologist has been appointed, who will conduct such scientific investigations as the opportunities of the hospital and clinic will permit. The medical staff of the institution will also, especially, direct their efforts to scientific endeavor. A training school for nurses, partaking of the character of a post-graduate school, has been established in connection with the hospital. Daily clinics for out-patients will be held. The institution is free of charge to all patients. Inoperable and incurable cancer cases, as well as operable cases, will be admitted to the hospital; the society hopes, in the near future, to have a home in the suburbs of the city, for the former cases. The following medical staff has been appointed: Drs. Gustav Baumgarten, Norman B. Carson, James R. Clemens, Martin F. Engman, Arthur E. Ewing, Edwin C. Burnett, Washington E. Fischel, Frank R. Fry, George Gellhorn, John Green, John B. Keber, Frank J. Lutz, Guthrie McConnell, Harvey G. Mudd, Greenfield Sluder, John B. Shapleigh, Elsworth Smith, Jr., Justin Steer, and Fred J. Taussig.

NEW YORK.

New York City.

Gifts to Hospitals.—Under the will of Margeretta A. Jones, her estate, which is appraised at more than $900,000, will be divided in equal shares among St. Luke's, Presbyterian and the Post Graduate hospitals. The incomes from these funds are to be used in providing free beds.

Bubonic Plague Aboard Ship.—The captain of the *Indrani*, which recently arrived from China and Japan, reported that one of the crew had died about a month before from bubonic plague and another, evidently suffering from the plague, had been put ashore. The crew was detained at quarantine and the vessel disinfected.

Going and Coming.—Dr. John A. Bodine sailed on the *Cedric* July 19.——Dr. William M. Ford arrived on the *Grosser Kurfuerst* July 19.——Dr. W. A. Bartlett sailed on the *Deutschland* July 20.——Dr. John W. Brannan sailed on *La Bretagne* July 20.——Dr. and Mrs. Francis J. Quinlan sailed on the *Deutschland* July 20.

Contagious Diseases.—There were reported to the Sanitary Bureau for the week ended July 15, 458 cases of measles, with 17 deaths; 371 cases of tuberculosis, with 136 deaths; 187 cases of diphtheria, with 27 deaths; 94 cases of typhoid fever, with 12 deaths; 50 cases of scarlet fever, with 5 deaths; 34 cases of cerebro-spinal meningitis, with 32 deaths and 34 cases of varicella.

Would Reduce Infant Death-Rate.—The Health Board is exerting every possible effort to cut down the death-rate among the babies of the tenements, and to this end, 110 men who are employed during the winter as school inspectors have been appointed to inspect the milk sold to the poor, to visit tenement houses and to instruct mothers in the proper manner of caring for milk.

At Work on Food Adulteration.—The officials of the Health Department announce that they are doing their utmost to protect the people of this city from food adulteration. The chief of the analytical laboratory, James P. Atkinson, says more money is needed to carry on the work as extensively as is needed. He has only two assistants who are available for food analysis. He believes that many of the deaths reported as ptomain poisoning have been due to other imprudent mixtures. In cases of suspected poisoning a fresh, unopened can of the brand supposed to be adulterated should be sent to the department.

Results of Hot Spell.—From July 9 to May 21 there were 193 deaths due to the heat and hundreds of prostrations. On July 18 there were 266 ambulance calls registered at police headquarters up to 9:30 p. m. Two physicians on the staff of St. Vincent's Hospital were prostrated by heat and overwork and the staffs and nurses of all hospitals were kept very busy. The death rate for the week was 23, at the annual rate of 23.01 per 1,000, as compared with 21.04 per 1,000 for the same period last year. The deaths recorded for the week ending July 15 showed 479 from diarrheal diseases, 435 of which were in children. The number of deaths in the tenement districts was 826, and of these 636 were children under one year.

Typhoid in Queens.—Typhoid fever is spreading in the borough of Queens. There are many cases at College Point and local physicians attribute it to the sewage flowing out in the mud flats of Flushing Bay and remaining there. St. John's Hospital, Long Island City and Long Island City itself have also many cases. Statistics at the Health Department show that the number of typhoid cases reported each year is decreasing with each annual report. Only two other cities in the United States have as low a death rate due to typhoid fever as New York. In 1903 there were 314 deaths due to typhoid out of 2,334 cases reported, while in 1904 there were 281 deaths and only 1,786 cases reported. Up to the present month there have been 85 deaths out of 478 cases reported, as against 115 deaths out of 818 cases reported in the same period of 1903.

PENNSYLVANIA.

Philadelphia.

Dr. Keen Honored.—Dr. William W. Keen, who is attending the celebration of the quarter-century of the Royal College of Surgeons, had the honorary degree of doctor of laws conferred on him by Edinburg University July 22.

Personal.—Among the physicians who sailed for Europe on the *Noordland*, July 15, were Drs. W. Wayne Babcock, Edgar W. Tully, and Samuel Wolfe.——Dr. Charles Weber is spending the summer in Europe.——Dr. William Krause sailed for Europe, July 18.——Dr. and Mrs. G. Hudson Makuen sailed for Hamburg on the *Pennsylvania* July 22.——Dr. and Mrs. Henry W. Stelwagon are spending the summer in Belgium and Holland.

Physician Committed.—Dr. Walter A. Van Voorhis was committed to prison, July 21, by the coroner, charged with the death of a woman resulting from a criminal operation. Dr. Van Voorhis denied being implicated in the woman's death, and said that he had treated her, but in a legal manner. The coroner's physician, who made the autopsy, testified that the cause of death was due to septicemia following the administration of drugs.

Health Report.—The total number of deaths reported for the week was 608, as compared with 548 for last week, and 482 for the corresponding period last year. The great increase is attributable to the extremely hot weather, as the increased mortality was due almost entirely to disease of infants and aged persons. During the week 233 infants died. The actual deaths from sunstroke reported were 19. The principal causes of death were: typhoid fever, 18; tuberculosis, 53; diphtheria, 4; cancer, 24; meningitis, 6; apoplexy, 28; convulsions, 7; heart disease, 47; acute respiratory disease, 24; enteritis, 138; Bright's disease, 31; inanition, 12, and marasmus, 23. There were 142 cases of contagious disease reported, with 22 deaths, as compared with 163 cases and 14 deaths reported last week. There were 108 cases of typhoid fever, with 18 deaths.

GENERAL.

Quarantine Against Panama.—The government of Costa Rica has declared Panama plague infected, though only one fatal case has been reported, and has prohibited the entrance of vessels from any port on the Isthmus to any port of the republic.

Yellow Fever in Panama.—Cable reports from Panama are still discouraging. At present seven patients with yellow fever are under treatment. Governor Magoon reported the death of an American employe July 15. The man was taken sick July 8.

Prompt Supply for the Isthmus.—A recent requisition by cable was filled at New York and the supplies reached the Isthmus in two weeks, a marked difference from the months that have sometimes elapsed while an order was only being approved. This requisition included thirty-eight tons of insect powder and revealed the fact that only twenty tons were to be had in New York City. Other items were twenty tons of sulphur, one hundred iron pots in which to burn it, fifteen tons of newspapers for making tight enclosures in the open buildings in connection with fumigation and seven tons of flour to make paste.

Progress in Temperance.—The American Medical Society for the Study of Alcohol and Other Narcotics held a successful meeting at Portland, Oregon, July 12, 1905. Papers were read and discussed and resolutions were adopted commenting on various evidences of progress in this very important field of medicine. Resolutions congratulating the people of this country on having made the study of physiology and hygiene, including the nature and effects of alcoholic drinks and other narcotics, compulsive for her 22,000,000 children of school age and also Great Britain on the fact that, through the efforts of practically the entire registered medical profession of the United Kingdom, public school study of the same subject is on the way to accomplishment, thus laying the foundation for a future of intelligent sobriety, strength and efficiency for the whole English speaking race. These resolutions also expressed joy in the evidence that the public school teaching in America of physiology and hygiene, including the nature and effects of alcoholic drinks and other narcotics, is resulting in better obedience to the laws of health, in a growing sentiment in favor of public sanitation and total abstinence, despite our enormous foreign immigration, and in the rapidly increasing prohibition of alcohol in industrial employments.

CANADA.

Street Cleaning Under a Health Department.—The street cleaning of Toronto has been placed under the charge of the city's medical health officer, Dr. Charles Sheard. This is a distinct advance in sanitary science in this city.

Personal.—Dr. Swale Vincent, Winnipeg, Man., professor of physiology in the medical faculty of the University of Manitoba, has been invited by the University of London, Eng., to deliver a course of lectures on "The Ductless Glands."

Winnipeg General Hospital.—For the week ending Saturday, July 8, the total number of patients treated in the Winnipeg General Hospital numbered 310, 188 men, 88 women and 34 children. In the outdoor departments the number treated was 136.

Lodge Practice Condemned in a Canadian City.—The Medical Society of Peterboro, Ont., has resolved that after Jan. 1, 1906, there will be no more lodge practice in that city. Twenty-six out of the twenty-eight practitioners, most of whom have been associated with lodge practice during the past five or ten years, have agreed to dispense with it altogether after the above named date.

British Medical Association.—The profession of Toronto met on the afternoon of July 13 for the purpose of extending a formal invitation to the British Medical Association to meet in Toronto in 1906, thereby indorsing the action of the Canadian Medical Association, which had dispatched an invitation in 1903. It was unanimously agreed that the profession in Toronto should commission Mr. I. H. Cameron, at present in England, to extend this invitation on behalf of the profession of Toronto.

Mental Wards in General Hospitals.—There are a certain class of cases often immediately adjudged insane and confined in so-called insane asylums, which would be far better cared for in mental wards in general hospitals. Toward this end in the province of Ontario, a deputation of medical men waited on the premier, the Hon. Mr. Whitney, on July 14. The deputation comprised members of both the Toronto Clinical Society and the Ontario Medical Association, and because it was a large one the proof is apparent that the profession of this province would like to see facilities for caring for these cases such as is done in Albany, N. Y., and other places, before commitment is made to an ordinary asylum for the insane. Dr. D. Campbell Meyers was the chief spokesman. The premier promised that the subject would have the immediate and careful consideration of his government.

FOREIGN.

Yellow Fever in Venezuela.—No improvement is reported in the yellow fever situation in Maracaibo. On the contrary, the disease seems to spread.

Plague in Great Britain.—A fatal case of plague occurred in Manchester, England, on June 12. The patient had been employed as cook on the steamer *Hylas*, from the Argentine Republic, via Hamburg.

Gift to Bergen, Norway, of a Laboratory for Pathologic Anatomy.—Dr. E. G. Gade has presented his native city of Bergen with $30,000 to equip and support a laboratory for pathologic anatomy. Bergen has long been wishing for a university or at least a medical institute of some kind.

Organization of the Profession in Germany.—The official board in charge of the construction of the canal at Kiel, Germany, wishes to have its medical officers sign a contract binding them to report to headquarters any patient who voluntarily retards his recovery. The local and district medical societies are protesting against this clause as degrading to the profession, and hope that no physicians will be found to accept the positions on these terms.

Endowment For Home For the Local Medical Societies of Nuremberg.—A liberal-minded citizen of Nuremberg, Germany, has endowed a fund of $80,000 for the erection and maintenance of a building to serve as a museum, library and gathering hall for local physicians. It is similar to the Pettenkofer House which Munich has long planned as a memorial to Pettenkofer and for which subscriptions have been laboriously collected, but which is yet far from approaching realization.

Postponement of International Congress of Gynecology.—The local committee in charge of the arrangements for the Fifth International Congress of Obstetrics and Gynecology, appointed for September, 1905, at St. Petersburg, announce that so many communications have been received from physicians and medical societies at home and abroad, expressing doubts whether the congress could prove a success under existing conditions, that it has been decided to cancel all dates for this year and postpone the gathering until September of 1906. The themes, programs, etc., already announced will be adhered to, modified as circumstances developing during the year may demand.

Yellow Fever in Africa.—In *Public Health Reports* it is stated that a death from yellow fever has occurred at Dakar in the French colony of Senegal on the west coast of Africa. A frightful epidemic of this disease occurred there in 1900 and the authorities, warned by their experience at that time, are taking every possible precaution to prevent the spread of the disease. The patient's family has been isolated and the house and furniture burned, the government assuming the loss. The hospital authorities have purchased wire cages, each of which will hold a bed, table and chair, in which to care for other yellow fever cases, should such occur, in order to prevent mosquitoes biting them and then infesting others.

Medical Study Trip to the Health Resorts of France.—The seventh annual trip of physicians and medical students to the health resorts of France will commence this year September 1, and continue till the 14th. The spas to be visited are those in the southwest of the country, including Luchon, Barbazan, Pau, Biarritz and Arcachon. The organizer of these instructive trips is Dr. Carron de la Carrière, rue Lincoln 2, Paris, France, from whom further details may be learned. The Chatel-Guyon Company, the Vichy Company, Professor Henrot of Rheims and two local medical societies have each endowed a membership in these study trips, the recipients to be an interne or recent medical graduate or member of one of the local societies interested.

Plague in Japan.—According to the report of Passed Assistant Surgeon Moore, in *Public Health Reports*, up to June 8, eleven cases of plague have been reported in Tokyo. All these cases have occurred in a section of the city inhabited by the poorer class of Japanese and not much frequented by foreign visitors. The disease has appeared in Kogawa Ken, a prefecture in the northern part of the island of Shikoku. Shiga, the bacteriologist, of Tokyo, investigated the outbreak and reported that during the period from May 30 to June 8, there occurred in one village 15 cases of plague with 8 deaths. Speaking generally, Dr. Moore states that the plague situation in Japan shows no signs of amelioration and that this infection has never manifested itself in a more threatening manner in that country.

Advance of Cholera on Europe.—Chantemesse spread before the Paris Académie de Médecine at a recent meeting the details of the onward march of cholera toward western Europe. He regards it as extremely significant that at present the disease

is installed in four different menacing foci, at Merv in the Trans-Caspian district, at Tiflis, Baku and Batoum in the Trans-Caucasian district, at Van in Anatolia, and along the banks of the Volga, in Astrakhan, Saratov and Samara. At these points the cholera hibernated but resumed its aggressions on the appearance of warm weather. It is now thoroughly established at Bagdad, which is a new and powerful center for its further spread. He thinks that the fear of its reaching western Europe is well founded.

International Congress on Tuberculosis.—The official announcement of this congress, to be held at Paris, October 2-7, states that there are to be four sections, medical pathology, surgical pathology, preservation and assistance of infants and the same for adults. "The New Methods of Early Diagnosis of Tuberculosis" will be the subject of a report by Achard of Paris, Mariani of Genoa, and C. T. Williams of London. "Treatment of Lupus by the New Methods" will be presented by Forchhammer, chief of the Copenhagen Light Institute, by Lesser of Berlin and by Jeanselme and Chatin of Paris in the medical section. A copy of the official circular in English will be sent on demand to Dr. M. Letulle, 21 rue de l' Ecole de Médecine, Paris, with any information desired. The circular contains the entire list of subjects and communications to be presented, with the list of subjects suggested by the committee of organization.

Merkel's Seventieth Birthday.—The friends of Prof. G. Merkel gathered at Nuremberg June 29 to celebrate his seventieth birthday and present him with a *Festschrift* in the form of the eighty-fourth volume of the *Deutsches Archiv f. klinische Medizin*, with which he has been connected since 1871. A subscription of $2,000 had also been raised and was presented in his name to the endowment fund for the relief of physicians' widows. The city authorities conferred honorary citizenship on him for his achievements in promoting sanitation and hygiene, in the construction of the new model city hospital, etc. One of the interesting features of the festivities was the address to his wife made by the burgemeister. He presented her with a wreath in the name of the city, for her predominant share in maintaining the "Leistungsfähigkeit" of her husband, that is, for the keeping of her husband in such good health and spirits that he is able to do such good work in these various lines. A portrait bust, tablets, etc., were also presented to Merkel from the Erlangen medical faculty and others, and the day closed with a lunch at the Merkel home, followed next day by a banquet tendered by the local medical society.

Program of International Congress.—The next International Medical Congress, to be held in Lisbon April 19 to 26, 1906, is expected to be one of great importance, in spite of its being held in what has always been considered as an out of the way country. Some of the most distinguished men of the medical profession have offered papers. Some of the topics for discussion that have been selected by the executive committee are the following:

SECTION OF DESCRIPTIVE AND COMPARATIVE ANATOMY, ANTHROPOLOGY, EMBRYOLOGY AND HISTOLOGY.

Definition, structure and composition of protoplasm.
Origin, nature and classification of pigments.
Cellular changes in normal tissues.
Evolution and involution of the thymus gland.

SECTION OF PHYSIOLOGY.

The rôle of leucocytes in nutrition.
The thyroid secretion.
Renal permeability.
The nutritive value of alcohol.
The physiology of the cytotoxins.
The blood ferments.

SECTION OF GENERAL PATHOLOGY, BACTERIOLOGY AND PATHOLOGIC ANATOMY.

What are the present scientific proofs of the parasitic nature of neoplasms, especially of cancer?
Preventive inoculations against bacterial diseases.
Preventive inoculations against protozoic diseases.
Preventive inoculations against diseases from an unknown specific agent.
The pancreas and fat necrosis.

THERAPEUTICS AND PHARMACOLOGY.

Local therapeutics in infectious diseases.
Separation, from a physiologic and therapeutic point of view, of the different radiations produced in Crooke's tubes and of those which are sent out by radioactive bodies.
The therapeutic value of bactericidal serums.
The relation between the molecular constitution of organic bodies and their physiologic and therapeutic action.

SECTION OF MEDICINE.

The pathogenesis of diabetes.
The pathogenesis of arterial hypertension.
The treatment of cirrhosis of the liver.
Cerebrospinal meningitis.
International defense against tuberculosis.
Meningeal hemorrhages.

SECTION OF PEDRIATICS.

Spastic affections of infancy; classification and pathogenesis.
Cerebrospinal meningitis; etiology and treatment.
The social struggle against rickets.
Orthopedic surgery in affections of nervous origin, spastic and paralytic.
Congenital dislocation of the hip.
The treatment of abdominal tuberculosis (peritoneal).

NEUROLOGY, PSYCHIATRY AND CRIMINAL ANTHROPOLOGY.

Penal reform from the anthropologic and psychiatric point of view.
Forms and pathogenesis of dementia præcox.
The relations of progressive muscular atrophy to Charcot's disease.
Cerebral localization in mental disease.
Education and crime.
Stigmata of degeneration and crime.

SECTION OF SURGERY.

Septic peritoneal infections; classification and treatment.
Gastrointestinal and intestinointestinal anastomoses.
Recent additions to arterial and venous surgery.

SECTION OF MEDICINE AND SURGERY OF THE URINARY ORGANS.

Surgical intervention in Bright's disease.
Surgical treatment of prostate-vesical tuberculosis.
Progress of urology in the diagnosis of renal disease.
Painful cystides.

SECTION OF OPHTHALMOLOGY.

Blepharoplasty.
Serotherapy in ophthalmology.

SECTION OF LARYNGOLOGY, RHINOLOGY, OTOLOGY AND STOMATOLOGY.

Study of the epileptogenous action of foreign bodies in the ear and of vegetations in the naso-pharynx.
The different forms of suppuration of the maxillary sinus.
Injections of paraffin in rhinology.
Differential diagnosis of tubercular, syphilitic and cancerous lesions of the larynx.
Choice of anesthesia in the extraction of teeth.
Treatment of alveolar suppuration.

SECTION OF OBSTETRICS AND GYNECOLOGY.

Conservative surgery of the ovaries.
Tuberculosis of the adnexa.
Symphyseotomy.
Pregnancy and cancer of the uterus.
Therapy of puerperal infections.

SECTION OF HYGIENE AND EPIDEMIOLOGY.

The intermediary of yellow fever.
The co-operation of nations to prevent the importation of yellow fever and the pest.
Watering the streets as a means against tuberculosis.
Recent additions to the etiology and epidemiology of epidemic cerebrospinal meningitis.

SECTION OF MILITARY MEDICINE.

Portable ration of the soldier during campaigns.
The purifying of the country water.
Emergency hospitals on the battlefield.

SECTION OF LEGAL MEDICINE.

Signs of death from drowning.
Ecchymoses in legal medicine.
Epilepsy in legal medicine.
Organization of medicolegal services.

SECTION OF COLONIAL AND NAVAL MEDICINE.

Etiology and prophylaxis of beri-beri.
Etiology and prophylaxis of dysentery in hot countries.
Mental diseases in tropical countries.
Hospital ships and their function in time of war.
Tuberculosis in the navy and its prophylaxis.

See page 1942 for further details of Congress.

Correspondence

Malpractice Insurance and Medical Defense.

HARTFORD, CONN., July 14, 1905.

To the Editor:—The discontinuance by the Travelers' Insurance Company of the insurance of physicians against the consequences of professional errors has been made the subject of comment in several recent numbers of THE JOURNAL. From what you have published it seems that you and your readers are under some misapprehension respecting the scope of physicians' and surgeons' liability insurance. In your editorial, April 1, you refer to it as insurance against malpractice suits. The opinion of the attorney-general of Iowa, to which reference is made in THE JOURNAL, April 22, seems to involve a like error, and Mr. E. H. Merritt, in his interesting letter published in the same number, evidently understands that it was the purpose of the insurance to cover malpractice, defined by him as "bad professional treatment of disease from reprehensible ignorance or carelessness."

The Travelers Insurance Company never issued a policy purporting to protect a physician or anyone else against the penalty of misconduct or bad conduct. Wanton mischief is not insurable, and a contract pretending to afford protection to one guilty of such an offense would not be enforced by any court. Physicians' and surgeons' liability insurance, and all other liability insurance written by responsible companies, excludes such misconduct. The policy mentioned as "mal-

practice insurance" insures the physician against damages recoverable "by reason of any error or mistake made by the assured in the practice of his profession." This phraseology limits the insurance to the unintentional negligence of the insured, for which, nevertheless, those who suffer thereby may be entitled to claim damages. In order that the exclusion of willful or gross negligence may be beyond question, the policy contains the further provision that the insurance does not cover claims founded wholly or in part on "the violation of any law or ordinance, nor while the insured is under the influence of intoxicants or narcotics or while engaged in any act outside the practice of his profession."

And in order that this kind of insurance might not extend beyond the bounds of prudent and ethical underwriting, policies were issued only to reputable and properly trained and accredited members of the profession. So limited, physicians' liability is a useful branch of the insurance business and may with propriety pay recoverable damages for such errors as have been made by many conscientious, painstaking and experienced physicians and surgeons, as well as the expenses of conducting the defense.

The discontinuance by the Travelers Insurance Company of this form of insurance is not, therefore, to be taken as an admission that it reflected discredit on either the company or the profession, because clearly it was not insurance against the merited penalties of malpractice or bad practice, of which no one ought to be able to relieve himself by insurance or otherwise.

I have no objection to disclosing the reasons by which the officers of the company were influenced. The premium rate was inadequate to the losses and expenses of the business. To conduct a defense properly, which the insurance company was bound to do at any cost, expensive expert testimony was necessary in every case, judgments when recovered were large, other expenses incidental to the management of such cases were large, comparatively few members of the profession cared for such insurance, wherefore the volume of business was small. The authorities of one or more states were not hospitable, laboring, it seemed to me, under the somewhat general misapprehension that the Travelers Insurance Company was engaged in protecting all kinds of doctors, regular, irregular and disreputable, against the consequences of malpractice. All these considerations indicated that it would be better to leave the business in the hands of other companies, who have the leisure and disposition to specialize it, than to make the effort to overcome all the disadvantages presented. Apparently the result when achieved, with adequate premium, would have been an insufficient reward for the time and energy diverted from more profitable and satisfactory lines.

S. C. DUNHAM,
President, the Travelers Insurance Company.

Anti-Spitting Laws and Associated Inconsistencies.

CHICAGO, July 18, 1905.

To the Editor:—During the years 1904 and 1905 I have received some very excellent circulars from the secretary of the State Board of Health of Illinois in reference to the alarming condition of tuberculosis in all states and especially in the crowded portions of Chicago. Last week I received a similar circular from the Illinois State Medical Society urging general practitioners especially to become more alert in the early detection and prevention of tuberculosis. Last winter I was pleased to see, as a result of these circulars and of the free public lectures on the prevention of tuberculosis, that the authorities in Chicago were thoroughly awakened to the alarming conditions and that many arrests of sidewalk expectorators were made. For weeks thereafter people went to the edge of the sidewalk to expectorate in the street. So far, well and good, but to my horror and chagrin when the warm weather came the "white-wings" honestly but unwittingly swept these dried tubercular germs into the nostrils of the unsuspecting multitudes daily passing by. Many times this summer I have had to hold my breath as I passed these clouds of germ-laden dust. This seems to me a travesty on hygienic precautions. A chain is no stronger than its weakest link; I therefore urgently ask that, through the medium of THE JOURNAL A. M. A., this matter be brought to the attention of the medical profession and especially to the department of health.

H. A. CUTHBERTSON.

Dr. Warren Kept His Portland Engagement.

SEATTLE, WASH., July 18, 1905.

To the Editor:—It is not generally known that the degree of LL.D. had been awarded to Dr. J. Collins Warren of Boston, orator on surgery at the session in Portland, by the University of Edinburgh, Scotland. Had he accepted the degree, his presence would have been required in Edinburg, and in consequence he could not have fulfilled his Portland engagement. This smacks of the fine spirit of 1776. It is just to Dr. Warren that the profession should know this self-denial of our colleague in putting aside the great honor.

J. H. MUSSER.

Association News

OFFICIAL MINUTES OF THE SECTIONS.

The following are the official minutes of the Portland, Ore., proceedings of the various sections, July 11-14, 1905, as far as received. The minutes of the Section on Stomatology and of the Section on Laryngology and Otology and of the Section on Pharmacology and Therapeutics will appear later. The list of members registered at the Portland session will be published as soon as verification of the lists is completed.

Section on Practice of Medicine.

TUESDAY, JULY 11.—AFTERNOON.

Dr. Richard C. Cabot in the Chair.

"The Incidence of Heart Disease in San Francisco," by Dr. William Fitch Cheney, San Francisco. Discussed by Drs. Ophuls, Walsh and Grandy.

"The Secret Nostrum Evil," by Dr. Frank Billings, Chicago. Discussed by Drs. Musser, Moore, Stengel, Walsh, Bridge, Priestley, Witherspoon, King, Grosse, McCleave, Stockton, Stengel, Bridge, and Carter.

"Studies in Roentgen Ray; Diagnosis of Chest Diseases," by Drs. James E. Talley and W. S. Newcomet of Philadelphia (read by Dr. Hall). Discussed by Drs. Neilsen, Musser, McCaskey and Hall.

Dr. Alfred Stengel, Philadelphia, offered resolutions (which were printed in full in THE JOURNAL, July 22, 1905, p. 275), and moved their adoption. Seconded and carried.

Dr. J. J. Walsh, New York, made a motion that the resolutions be also sent to the secretary of the Canadian Medical Association for the purpose of informing that association of the methods employed in attempting to do away with nostrums. The motion was seconded and carried.

WEDNESDAY, JULY 12.—MORNING.

SYMPOSIUM ON NEPHRITIS.

A paper on "General Considerations on the Pathology of the Kidney," by Dr. W. T. Councilman, Boston, was not read, but reference was made to it by the Chairman, Dr. Cabot.

"Albuminuria in Nephritis and Bright's Disease," by Dr. Alfred Stengel, Philadelphia.

"Cylindruria," by Dr. Chas. P. Emerson, Baltimore.

"The Relation of Kidney Conditions to Puerperal Eclampsia," by Dr. Philip King Brown, San Francisco.

"The Dietetic Treatment of Nephritis," by Dr. F. C. Shattuck, Boston.

These five papers were discussed by Drs. Witherspoon, Ophuls, Bulkley, Hutchinson, Francine, Walsh, Billings, Musser, Fussell, Le Roy, Lichty, Stengel and Brown.

WEDNESDAY, JULY 12.—AFTERNOON.

SYMPOSIUM ON ANIMAL PARASITES AND TROPICAL DISEASES.

"Symptoms, Diagnosis and Prognosis of Amebiasis in the Tropics," by Dr. W. E. Musgrave, Manila, P. I. Discussed by Drs. Dock, Lemon, Black, Shattuck, Smith and Musgrave.

"The Mode of Infection in Uncinariasis," by Dr. Claude A. Smith, Atlanta, Ga. Discussed by Drs. Fussell, Cheney, Brown and Smith.

A nominating committee was appointed, consisting of Drs. Hall, Stockton and Shattuck.

THURSDAY, JULY 13.—MORNING.

SYMPOSIUM ON THE STOMACH.

"Recent Advances in the Physiology of Human Nutrition," by Dr. Frank Billings, Chicago.

"Methods, Value and Limitations of the Knowledge of the Gastric Contents," by Dr. George Dock, Ann Arbor, Mich.

"Non-Gastric Diseases Presenting Gastric Symptoms," by Dr. J. H. Musser, Philadelphia.

"Food Stagnation from All Causes," by Dr. Charles G. Stockton, Buffalo, N. Y.

These four papers were discussed by Drs. Cabot, McCaskey, Manges, Black, Miller, Anders, Shattuck, Bond, Walsh, Lichty, Cooper, Bridge, Billings, Dock, Musser and Stockton.

"Type of Tuberculosis on the North Pacific Coast," by Dr. Woods Hutchinson, Portland. Discussed by Drs. Cheney, Miller, Bridge, Brown, Ophuls, Robbins, Osborne, Moffit, and Hutchinson.

ELECTION OF OFFICERS.

The election resulted as follows: Chairman, Dr. Herbert C. Moffit, San Francisco; secretary, Dr. J. L. Miller, Chicago; alternate, Dr. George Dock, Ann Arbor.

"Coccidioidal Granuloma," by Dr. W. Ophuls, San Francisco, Discussed by Dr. Rykfogel.

"Thyroid Disease in California," by Dr. Herbert C. Moffit, San Francisco. Discussed by Drs. Walsh, Wells, Quevli, McCaskey, Whiteside, Grandy, Lichty, Johnson, and Moffit.

"The Value of Various Hemoglobin Instruments to the General Practitioner," by Dr. M. Howard Fussell of Philadelphia.

Section on Obstetrics and Diseases of Women.

TUESDAY, JULY 11—AFTERNOON.

Dr. Manton presided while the Chairman, Dr. C. L. Bonifield, delivered his address.

The first paper was by Dr. T. B. Eastman, Indianapolis, on "Innocent Fibromyoma of the Uterus." Discussed by Drs. F. B. Andrews, W. F. Wakefield, J. H. Carstens, L. H. Dunning, D. H. Craig, Hawkins, W. O. Henry, R. T. Gilmore, and C. L. Bonifield.

Dr. William E. Ground, Superior, Wis., read a paper on "Causes of Failure After Successful Gynecologic Operations." Discussed by Drs. J. H. Carstens, D. H. Craig, G. M. Wells, Hawkins, Newman, and Ground.

Dr. F. J. Taussig presented a resolution concerning the report on uterine cancer from the Gynecologic Section of the International Congress of Arts and Science, entitled: "What May Be Done to Increase the Percentage of Cures in Uterine Cancer?" The resolution was referred to the House of Delegates. (This resolution and report are printed in full in THE JOURNAL, July 22, page 283.)

WEDNESDAY, JULY 12—MORNING.

The Section convened at 9:30, Dr. Bonifield presiding.

Dr. J. Riddle Goffe, New York, read a paper on "Tubal Pregnancy, with Report of an Instructive Case."

Dr. J. H. Carstens read a paper entitled "Some Cases of Extrauterine Pregnancy."

These two papers were discussed by Drs. R. T. Gilmore, L. H. Dunning, C. O. Thienhaus, Perkins, D. C. Brockman, W. E. Ground, W. O. Henry, C. L. Bonifield, and Carstens.

Dr. W. F. Wakefield, San Francisco, read a paper on "Postoperative Pelvic Exudates." Discussed by Drs. H. O. Pantzer, C. O. Thienhaus, D. H. Craig, J. Riddle Goffe, C. S. Bacon, J. H. Carstens, F. B. Andrews, H. C. Crowell, and Wakefield.

Dr. F. B. Andrews, Chicago, read a paper entitled "Hernia of the Fallopian Tube." Discussed by Dr. T. B. Eastman and A. Goldspohn.

WEDNESDAY, JULY 12—AFTERNOON.

Called to order at 2 p. m.

Dr. L. H. Dunning, Indianapolis, read a paper on "Gonorrhea in the Female." Discussion by Drs. D. H. Craig, A. Goldspohn, W. O. Henry, and Dunning.

The Chairman appointed the following nominating committee: J. H. Carstens, L. H. Dunning, D. H. Craig, E. F. Tucker, and F. H. Wiggin.

Dr. W. D. Kelly, St. Paul, read a paper entitled "An Operation for Pyosalpinx, Without Ligature, Clamp, Artery Forceps or Bleeding, by Overthrow Provisional Suture Method." Discussed by Dr. Ryan, Iowa.

Dr. A. Goldspohn contributed his "Fourth Detailed Report of the Superior and Lasting Results of the Bi-inguinal Operation for Simple and Complicated Aseptic Retroversion of the Uterus."

Dr. D. H. Craig, Boston, read a paper entitled "The Conservation or Restoration of Normal Anatomy in Gynecologic Surgery."

Discussion on these two papers by Drs. C. O. Thienhaus, W. O. Henry, A. E. Gallant, Frisbee, E. F. Tucker, H. O. Marcy, Goldspohn, and Craig.

Dr. E. F. Tucker, Portland, read a paper on "Etiology and Treatment of So-called Endometritis." Discussed by Dr. Marcy.

On motion the Chair appointed Drs. Tucker, Clark (Philadelphia) and Marcy a committee to report next year on proper nomenclature of endometritis.

THURSDAY, JULY 13—MORNING.

The Section convened at 9 a. m.

Dr. George B. Somers, San Francisco, read a paper on "Repair of the Perineum." Discussed by Drs. Carstens, Marcy, Wakefield, Ferguson, Clark, Bacon, Andrews, Kieffer, and Somers.

Dr. F. D. Donoghue, Boston, read a paper entitled "Some Complications of Pregnancy Treated Surgically." Discussed by Drs. Montgomery, Bacon, Carstens, Dorsett, and Donoghue.

Dr. C. S. Bacon, Chicago, followed with a paper on "Pulmonary Tuberculosis as an Obstetric Complication."

Dr. G. S. Whiteside, Portland, read a paper on "Maternal Syphilis."

These two papers were discussed by Drs. Bertola, Taussig, Davis, Henry, Carstens, Donoghue, Bacon, and Whiteside.

Dr. Ferguson was given permission to exhibit a new obstetric forcep, and Dr. Gallant, a new metal uterine drain.

Dr. W. H. Sanders, Montgomery, Ala., read a paper on "The Physiologic and Legal Status of the Fetus in Utero," which was discussed by Dr. Marcy.

THURSDAY, JULY 13—AFTERNOON.

Convened at 2 p. m.

The Nominating Committee reported as follows: Chairman, Charles S. Bacon, Chicago; Vice-chairman, E. F. Tucker, Portland; Secretary, W. P. Manton, Detroit; Delegate, D. H. Craig, Boston; Alternate, T. B. Eastman, Indianapolis.

On motion, the report was adopted and the Secretary instructed to cast the unanimous ballot of the Section for the election of these officers.

Dr. J. A. McKenna, Lansdowne, Pa., read a paper on "Present-day Methods of Conducting Labor Cases and Results Obtained." Discussed by Drs. Shannon and McKenna.

Dr. E. V. Davis, Chicago, read a paper on "A Study of the Female Bony Pelvis." Discussed by Drs. Henry, Carstens, and Davis.

Dr. E. T. Shelly, Atchison, Kan., read a paper on "The Maternal Impression Superstition in Modern Obstetrics Teaching." Discussed by Drs. Carter and Henry.

Dr. L. H. Branson, Iowa City, read a paper on "Syncytioma Malignum." Discussed by Dr. Henry.

Section on Surgery and Anatomy.

TUESDAY, JULY 11—AFTERNOON.

Chairman's address, by Dr. Maurice H. Richardson, Boston.

"The Cure of Inguinal Hernia," by Dr. Henry O. Marcy, Boston. No discussion.

The Chairman announced that papers would be limited to twenty minutes and discussions to five minutes.

"Fibroid Growths of the Abdominal Wall," by Dr. Charles A. Powers, Denver. Discussed by Drs. Robert F. Weir, New York; E. Rixford, San Francisco; McGlennon, Baltimore; Connell, Fond du Lac; Willoughby, Los Angeles; Fulton, Astoria; L. L. McArthur, Chicago, and M. H. Richardson, Boston.

"Splanchnoptosis from a Surgical Standpoint," by Dr. James E. Moore, Minneapolis. Discussed by Drs. Coffey, Oregon; A. Ernest Gallant, New York, and B. B. Davis, Omaha.

"The Early Diagnosis of Gastric Ulcer," by Dr. H. D. Niles, Salt Lake City.

"Clinical Experiences with the Use of the McGraw Elastic Ligature," by Dr. A. J. Ochsner, Chicago.

"Ulcer of the Stomach and First Portion of the Duodenum, with Especial Reference to the Operative Treatment," by Dr. W. J. Mayo, Rochester, Minn.

These papers were discussed by Drs. Hugo Pantzer, Cincinnati; A. P. Francine, Philadelphia; George Goodhue, Dayton, Ohio; J. H. Carstens, Detroit, and Smith, of Portland.

"Acid Intoxication and Late Poisonous Effects of Anesthetics," by Dr. A. D. Bevan, Chicago. Discussed by Drs. Herbert C. Moffitt, San Francisco; Harry M. Sherman, San Francisco;; Woods Hutchinson, Portland; Binswanger, Portland, and D. A. K. Steele, Chicago.

"Perforations in Typhoid Fever," by Dr. Richard H. Harte, Philadelphia. Discussed by Drs. Lawrence Litchfield, Pittsburg; Charles A. Powers, Denver, and Morris Manges, New York.

WEDNESDAY, JULY 12—MORNING.

"A Clinical Chart for the Record of Patients in a Small Hospital," by Dr. George F. Wilson, Portland, Ore. Discussed by Drs. Wright, Salt Lake City, and Harry M. Sherman, San Francisco.

"Preliminary Report of a Study of Tetanus," by Dr. James M. Anders, Philadelphia. Discussed by Drs. Smith, Hartford; L. L. McArthur, Chicago; G. McCaskey, Ft. Wayne; Walsh, Erie; McLean, California.

"Cysts of the Spleen," by Dr. W. A. Bryan, of Nashville, Tenn.

"Indications for the Removal of the Pathologic Spleen," by Dr. B. B. Davis, of Omaha. Discussed by Drs. M. L. Harris, Chicago; Charles A. Powers, Denver; Schleefer, St. Louis; A. H. Cordier, Kansas City; H. G. Marxmiller, Cincinnati; McDaniel, San Antonio; Jepson, Iowa, and Griffiths, Kansas City.

"Lip Operation for Cancer and Deformity, with Report of Cases," by Dr. W. W. Grant, of Denver.

"Esophagectomy, with Report of Case, with Prothetic Appliances," by Dr. Wallace L. Terry, of San Francisco.

"Six Cases of Operation on the Intestines, Five of Which Were for Cancer," by Dr. Boucher, of Hartford.

"Cancer," by Dr. William L. Rodman, of Philadelphia.

These four papers were discussed by Drs. Sherrill, Tinos; J. J. Hamilton, J. C. Stewart, McLenahan; Martin, Levings, Rixford, Parham, Sailer, Frank and Powers.

WEDNESDAY, JULY 12—AFTERNOON.

"A New Method of Incising and Suturing the Liver to Reestablish Its Continuity and for the Control of Hemorrhage," by Dr. Jacob Frank, of Chicago.

"Gallstones in the Common Duct," by W. D. Haggard, Nashville, Tenn.

"Non-calculous Cholecystitis," by Dr. David S. Fairchild, of Des Moines, Iowa.

These three papers were discussed by Drs. McLaren, Potter, Grotham, Cooper, Ochsner, Carstens, Mayo and Hamilton.

"Penetrating Wounds of the Abdomen," by Dr. R. Winslow, of Baltimore. Discussed by Drs. Cooper, Brayton, McRae, Willard, and Boucher.

"Meckel's Diverticulum as a Cause of Abdominal Crises," by Dr. Miles F. Porter, of Ft. Wayne. Discussed by Drs. Winslow and Jepson.

"Phlebitis Following Abdominal Operations," by Dr. A. H. Cordier, of Kansas City. Discussed by Drs. Tinos and Goldspohn.

"Anaërobic Cellulitis, with Report of Successful Cases," by Dr. J. Clark Stewart, of Minneapolis. No discussion.

Dr. Brayton, of Indiana, announced that the Indiana delegation had with them the first woman operated on for gallstones, and that she would be shown to-morrow to the Section on Obstetrics and Diseases of Women.

THURSDAY, JULY 13—MORNING.

"Exstrophy of the Bladder Successfully Treated by Peter's Method, with Illustrations," by Dr. Harry M. Sherman, San Francisco. Discussed by Drs. Wells and McArthur.

"Tuberculosis of the Kidney," by Dr. J. Garland Sherrill, Louisville, Ky. Discussed by Drs. Smith, Richardson, Huntington, Sharples, Munson, and Frank.

"Treatment of Congenital Dislocation of Hip, with Report of Cases," by Dr. Park Weed Willis, Seattle, Wash. Discussed by Drs. Hunkin, Willard, Thienhaus, Sherman, Parker, Moore, Baldwin, and Ochsner.

"Ununited Fracture in Cases of Delayed Union," by Dr. Casper W. Sharples, Seattle, Wash. Discussed by Drs. Martin, Huntington, Sherman, Hunkin, and Means.

"Site of Origin of Gallstones," by Dr. L. L. McArthur, Chicago. Discussed by Drs. Thienhaus, Richardson and Weir.

"Fractures of the Leg: Their Diagnosis and Treatment, with

Report of Cases and Demonstration of *X*-Ray Pictures," by Dr. C. O. Thienhaus, Milwaukee, Wis. Discussed by Dr. Knox.

ELECTION OF OFFICERS.

The following officers were elected:

Chairman, Dr. Robert F. Weir, New York; Secretary, Dr. A. MacLaren, St. Paul.

Dr. Willard announced that the senior member of the Executive Committee retired and the outgoing chairman took his place.

Dr. Ochsner moved that the Secretary be instructed to cast a unanimous ballot for the men nominated by the Executive Committee. Carried.

Dr. Weir briefly thanked the section for the honor conferred.

Dr. Weir nominated Dr. Ochsner as delegate, but he declined.

Dr. Willard moved, and Dr. Ochsner seconded, the nomination of Dr. Jonas, of Moaga. Carried unanimously.

It was moved and seconded that the Executive Committee be empowered to fill all vacancies occurring for any cause during the ensuing year.

Dr. Powers moved a standing vote of thanks to Rev. E. P. Hill and the officers of the First Presbyterian Church for the use of the church for the meetings of the section. Carried.

Dr. Ochsner moved a vote of thanks to the retiring Chairman and Secretary of the Section. Carried.

Drs. Richardson and McRae briefly replied.

Section on Ophthalmology.

TUESDAY, JULY 11.—AFTERNOON.

The Section was called to order by the Chairman, Dr. Christian R. Holmes, Cincinnati, at 2 p. m.

Prof. J. Hirschberg of Berlin was introduced as an invited guest of the society.

Drs. Frank Allport, Chicago, and Robert L. Randolph, Baltimore, of the Executive Committee, being absent, the Chairman appointed to serve in their places Drs. Edward Jackson, Denver, and Samuel D. Risley, Philadelphia.

Dr. Melville Black, Denver, representative in the House of Delegates, not being present, the chairman appointed Dr. W. H. Snyder, Toledo, Ohio.

The Chairman then delivered his address: "Studies of School and Hospital Hygiene of Interest to the Ophthalmic Surgeon" (Illustrated with Lantern Slides).

"Is Keratitis Ever Caused by Rheumatism?" by Dr. Leartus Connor, Detroit. Discussed by Drs. W. H. Snyder, Toledo, and Leartus Connor, Detroit.

"The Physiologic Action of Dionin," by Dr. W. H. Snyder, Toledo, Ohio. Discussed by Dr. H. H. Brown, Chicago.

"The Correction of Exophoria by the Development of the Interni," by Dr. W. H. Roberts, Pasadena, Cal. Discussed by Drs. G. C. Savage, Nashville; F. B. Eaton, San Francisco; Dudley S. Reynolds, Louisville; W. C. Posey, Philadelphia; Samuel D. Risley, Philadelphia; John E. Weeks, New York; C. H. Williams, Boston; Wm. Zentmayer, Philadelphia; Leartus Connor, Detroit, and J. S. Kirkendall, Ithaca, N. Y.

"Lateral Displacement of Tendon Insertions for the Cure of Strabismus," by Dr. Edward Jackson, Denver. Discussed by Drs. G. C. Savage, Nashville, and Edward Jackson, Denver.

"Transitory Paralysis of the Abducens: with Report of Cases," by Dr. Meyer Wiener, St. Louis. Discussed by Dr. H. Stillson, Seattle.

On motion of Dr. Samuel D. Risley, Philadelphia, the society voted to instruct the representative in the House of Delegates to nominate its guest, Prof. J. Hirschberg, of Berlin, for honorary membership in the Association.

The Section was called to order at 9 a. m. by the Chairman, Dr. C. R. Holmes.

WEDNESDAY, JULY 12.—MORNING.

"Demonstration of a Simple Method of Accurately Localizing by the *x*-ray a Foreign body in the Eye," by Dr. Vard H. Hulen, San Francisco. Discussed by Drs. J. E. Weeks, New York; E. Jackson, Denver, and V. H. Hulen.

"Blasting Eye Injuries," by Dr. John A. Donovan, Butte, Mont.

"Some Eye Injuries and Their Lessons," by Dr. F. C. Heath, Indianapolis.

"Traumatic Lesions of the Eye," by Dr. F. W. Miller, Los Angeles, Cal.

These three papers were discussed by Drs. E. Jackson, Denver; Prof. J. Hirschberg, Berlin; Eugene Smith, Detroit; W. E. Briggs, Sacramento; L. H. Taylor, Wilkesbarre; J. E. Weeks, New York; S. D. Risley, Philadelphia; M. D. Stevenson, Akron; J. A. Donovan, Butte, Minn., and F. G. Heath, Indianapolis.

"Description of an Advancement Suture, with Collective Suggestions Regarding Operations on the Ocular Muscles," by Dr. Mark D. Stevenson, Akron, Ohio. Discussed by Drs. G. C. Savage, Nashville; W. C. Posey, Philadelphia; J. E. Weeks, New York; J. A. L. Bradfield, La Crosse, Wis., and M. D. Stevenson.

WEDNESDAY, JULY 12.—AFTERNOON.

The Section was called to order at 2 p. m., by the Chairman, Dr. C. R. Holmes.

Address (by special invitation) by Prof. J. Hirschberg, Berlin.

Dr. S. D. Risley, Philadelphia, moved that the society extend a vote of thanks to Professor Hirschberg for his eloquent and learned address, and that a copy be requested for publication in the transactions. The motion was carried by a standing vote.

Professor Hirschberg presented to the society a volume on Arabian Ophthalmology, dedicated to the Section, which was accepted by the Chairman with thanks.

"The Ocular Symptoms of Affections of the Accessory Sinuses of the Nose," by Dr. W. C. Posey, Philadelphia. Discussed by Drs. C. R. Holmes, Cincinnati; J. E. Brown, Minneapolis; W. H. Snyder, Toledo; F. W. Hilscher, Spokane; S. D. Risley, Philadelphia; Leartus Connor, Detroit; E. Jackson, Denver; J. A. Donovan, Butte, Mont.; J. A. L. Bradfield, La Crosse, Wis.; H. Stillson, Seattle, and W. C. Posey, Philadelphia.

"The Extraction of Uncomplicated Immature Senile Cataract," by Dr. A. E. Bulson, Jr., Fort Wayne, Ind. Discussed by Prof. J. Hirschberg, Berlin, and Drs. S. D. Risley, Philadelphia; J. A. Bach, Milwaukee; W. C. Posey, Philadelphia; Eugene Smith, Detroit; C. R. Holmes, Cincinnati, and A. E. Bulson, Jr.

"Endothelio-Cylindroma of the Orbit, with Report of a Case. Removal, with Preservation of the Vision and Motility of the Eye," by Dr. John E. Weeks, New York. Discussed by Drs. C. R. Holmes, Cincinnati; E. V. L. Brown, Chicago, and J. E. Weeks.

"The Prevention and Cure of Progressive Axial Myopia by Appropriate Treatment of the Internal and External Recti Muscles; with Report of Cases," by Dr. F. S. Crocker, Chicago. Discussed by Drs. G. C. Savage, Nashville, and F. S. Crocker.

THURSDAY, JULY 13.—MORNING.

The Section was called to order at 9 a. m., by the Chairman, Dr. C. R. Holmes.

"Rat-tail Tendons for Sutures in Eye Surgery," by Dr. Kaspar Pischel, San Francisco.

Dr. de Beck, Seattle, demonstrated a number of ingenious devices of the Indians of the northwest for the prevention of snow-blindness, all of which were made of wood and on the principle of our "goggles."

"Iritis Tuberculosa as Diagnosed and Treated by Koch's Tuberculin," by Drs. W. A. Gamble and E. V. L. Brown, Chicago. Discussed by Drs. A. E. Bulson, Jr., Fort Wayne; Kaspar Pischel, San Francisco, and E. V. L. Brown.

"New Test Types Made According to Geometrical Progression," by Dr. Charles H. Williams, Boston. Discussed by Drs. D. S. Reynolds, Louisville; G. C. Savage, Nashville, and C. H. Williams.

"Subconjunctival Salt Injections," by Dr. S. D. Risley, Philadelphia. Discussed by Drs. W. Zentmayer, Philadelphia; L. H. Taylor, Wilkesbarre; J. E. Weeks, New York; A. E. Bulson, Jr., Fort Wayne; S. L. Ledbetter, Birmingham, Ala.; Leartus Connor, Detroit; Kaspar Pischel, San Francisco; Prof. J. Hirschberg, Berlin, and S. D. Risley.

"Sympathetic Inflammation Following Panophthalmitis," by Dr. William Zentmayer, Philadelphia. Discussed by Drs. E. V. L. Brown, Chicago; Prof. J. Hirschberg, Berlin, and W. Zentmayer.

"Non-toxic Amblyopia," by Dr. T. W. Moore, Huntington, W. Va. Discussed by Drs. G. C. Savage, Nashville, Dudley S. Reynolds, Louisville; W. C. Posey, Philadelphia; S. D. Risley, Philadelphia; Leartus Connor, Detroit, and T. W. Moore.

THURSDAY, JULY 13.—AFTERNOON.

The Section was called to order at 2 p. m., by the Chairman, Dr. C. R. Holmes.

The Executive Committee, by its Chairman, Dr. John E. Weeks, New York, reported the following nominations for officers of the Section for the ensuing year: Chairman, Dr. L. H. Taylor, Wilkesbarre, Pa.; Vice-Chairman, Dr. W. H. Wilder, Chicago; Secretary, Dr. A. E. Bulson, Jr., Fort Wayne, Ind.; delegates, Dr. C. R. Holmes; Cincinnati; alternate, Dr. Leartus Connor, Detroit.

The Committee also recommended the following resolution for adoption:

Resolved, That not more than half the time available for any one session of the Section shall be allotted to the reading of papers, and that the section officers are instructed to arrange the program in accordance with this rule.

Resolved, That each person proposing to read a paper before the Section shall inform the section officers of the maximum time he will require to present it, that such time shall be taken into account in deciding to give it a place on the program; and that such time limit shall be rigidly enforced.

The report of the committee was submitted to the Section and unanimously adopted.

"Amblyopia Caused by Wood Alcohol," by Dr. C. S. G. Nagle, San Francisco. Discussed by Dr. Brown.

"Experimental and Clinical Evidence of Dynamic (Spastic) Astigmatism. Practical Conclusions," by Dr. F. B. Eaton, San Francisco. Discussed by Drs. Posey, Philadelphia; de Beck, Seattle, and M. D. Stevenson, Akron, Ohio.

"A Case of Melanotic Sarcoma of the Chorold," by Dr. L. H. Taylor, Wilkesbarre, Pa.

"A Contribution to the Etiology of Pigmented Sarcoma of the Chorold," by Prof. J. Hirschberg, Berlin.

These two papers were discussed by Drs. D. S. Reynolds Louisville; J. E. Weeks, New York; Kaspar Pischel, San Francisco; L. H. Taylor, Wilkesbarre, and Professor Hirschberg, Berlin.

The Section extended a vote of thanks to Dr. J. F. Dixon, of Portland, for his kindness in arranging for the meeting hall, etc., and to the officers of the Section for their excellent work.

A vote of thanks was also extended to Prof. J. Hirschberg, Berlin, for his kindness in being present and in addressing the society.

Section on Hygiene and Sanitary Science.

TUESDAY, JULY 11.

In the absence of the Chairman, Dr. John S. Fulton, Baltimore, the Secretary, Dr. M. L. Price, Baltimore, called the Section to order at 2 p. m., and Dr. H. G. Beyer was asked to take the Chair temporarily.

Dr. Beyer took the Chair and read the Chairman's address from the manuscript of Dr. Fulton. The address was discussed by Drs. Heg, Chapman, Price, Morrison, Janeway, Foster, Powers, Lindsay, Carroll, and Browning.

WEDNESDAY, JULY 12—MORNING.

Dr. Heg in the Chair.

"Recent Progress in Matters of Water Supply and Sewage Disposal," by Mr. G. W. Fuller, New York City, was read by Dr. Beyer, in the absence of the author. Discussed by Drs. Foster, Price, Janeway, Lewis, Cummings, Pierce, Beyer, and Heg.

Dr. H. G. Beyer, U. S. Navy, read a paper on "The Water Supply of Ships from Its Early Beginnings to the Present Time." Discussed by Drs. Lewis, Woodruff, Powers, Price, and Browning.

Dr. Charles E. Woodruff, U. S. Army, read a paper on "Cholera." Discussed by Drs. Lewis and Woodruff.

WEDNESDAY, JULY 12—AFTERNOON.

Dr. Beyer in the Chair.

Dr. Browning requested a discussion on the subject of the systematic disinfection of school buildings, but at this point Dr. Woodruff offered the following resolution, which he moved that

the Section on Hygeine and Sanitary Science adopt and submit to the House of Delegates.

WHEREAS, The science of prevention of disease having been long established on a solid scientific basis, it is now time that this fact be recognized by the national Legislature; be it

Resolved, By the American Medical Association that the attention of the people and of their representatives in Congress be directed to the fact that no adequate provision by law has yet been made to avoid in time of war the preventable deaths by disease of the soldiers who offer their lives for the preservation of the Nation: be it further

Resolved, That this Association also heartily indorses the statement of the President of the United States that the people have not compelled their representatives to provide adequately in advance for the medical system, in its personnel, material, its organization and physical instruments necessary to make that organization effective, which alone, if prepared in advance, will obviate the trouble which otherwise is certain to come if we have a war.

Dr. Woodruff addressed the meeting in explanation of his offer of the resolution, and the resolution was discussed by Drs. Beyer, Janeway, Lewis, and Woodruff.

The motion on the resolution was then put by the Chairman and carried.

Dr. James Carroll, United States Army, read a paper on "Some Experiments in Feeding Cultures of Bacillus Typhosis." Discussed by Drs. Ryland, Morrison, Beyer and Carroll.

THURSDAY, JULY 13—AFTERNOON.

ELECTION OF OFFICERS.

The Secretary called the meeting to order and stated that the first business was the election of officers. The Secretary then appointed a nominating committee, consisting of Dr. Carroll, of Washington, D. C., Chairman; Dr. Chapman, of Ohio, and Dr. Foster, of California. The committee reported the following nominations: Chairman, H. G. Beyer, U. S. Navy; Secretary, M. L. Price, Baltimore; member of the House of Delegates, James Carroll, U. S. Army; Executive Committee, G. T. Swartz, Rhode Island; H. M. Braehm, Minnesota; J. W. Fulton, Baltimore.

Dr. Lewis: Let me ask if the Executive Committee is appointed or elected?

The Secretary: The Executive Committee is provided for by the by-laws of the American Medical Association, but it is customary for the sections to indorse their names.

Dr. Dewey, of Washington, then moved to substitute the name of Dr. Denslow Lewis, Chicago, for Chairman; Dr. E. J. Heg, of Washington, for Secretary, and Dr. H. G. Beyer for Delegate to the American Medical Association.

There was no contest as to the nominations on the Executive Committee, and, on ballot, Dr. Denslow Lewis was elected Chairman.

Dr. Lewis then nominated Dr. H. W. Dewey, of Washington, for Delegate to the House.

On ballot Dr. Elmer J. Heg was elected Secretary.

On ballot Dr. Dewey was elected Member of the House of Delegates.

The Secretary then requested Dr. Lewis to take the Chair temporarily. Dr. Lewis addressed the meeting.

Dr. D. N. Carpenter, U. S. Navy, read a paper on "The Relation of the Water Supply to the Diseases of the Panama Isthmus." Discussed by Drs. Lewis and Carpenter.

Dr. M. L. Price, of Baltimore, read a paper on "The Principles of Life." Discussed by Dr. Lewis.

Section on Diseases of Children.

TUESDAY, JULY 11—AFTERNOON.

The Section was called to order at 2:45 p. m. by the Chairman, Dr. John Lovett Morse, of Boston.

The Secretary, Dr. J. Ross Snyder, then took the Chair and the Chairman delivered his address: "The Teaching of Pediatrics."

"A Plea for National and Local Boards of School Hygiene," by Dr. Alice M. Smith, Tacoma, Wash. Discussed by Drs. Wahrer, Fort Madison; Fairbanks, Boston; Garrison, Dixon, Ill.; McGavin, Portland, and Smith.

"Rules for the Care of Young Infants in Public Institutions," by Dr. H. M. McClanahan, Omaha. Discussed by Drs. John C. Cook, Chicago; Arthur W. Fairbanks, Boston; Alice M. Smith, Tacoma; Lindsay, Boulder; Wahrer, Fort Madison, and McClanahan.

WEDNESDAY, JULY 12—MORNING.

The Section was called to order shortly after 9 a. m. by the Chairman, Dr. John Lovett Morse. Dr. A. C. Cotton, of Chicago, was appointed to serve on the Executive Committee in the place of Dr. C. G. Kerley, New York City.

"On Amaurotic Family Idiocy," by Dr. A. C. Cotton, Chicago. Discussed by Drs. Morse and Cotton.

"The Prevention of Summer Diarrhea," by Dr. Maurice Ostheimer, Philadelphia. Discussed by Drs. Wahrer, Fort Madison; Silver, New York; Kate Lindsay, Boulder; C. Blumer, San Francisco; Arthur W. Fairbanks, Boston; A. C. Cotton, Chicago; Wells, North Yakima; Moore, New York City, and Ostheimer.

"A Study of Fifteen Cases of Diarrhea in Children," by Dr. John C. Cook, Chicago. Discussed by Drs. Michael, Chicago; Fairbanks, Boston, and Cook.

"Ataxia of Central Origin Appearing in Childhood," by Dr. Arthur W. Fairbanks, Boston. (With lantern slide exhibition at close of session.) Discussed by Drs. Wahrer, Fort Madison, and H. E. Garrison, Dixon, Ill., and Fairbanks.

WEDNESDAY, JULY 12—AFTERNOON.

The Section was called to order by the Chairman.

"Pneumonia in the Young," by Dr. Edward F. Wells, Chicago. Discussed by Drs. A. C. Cotton and William J. Butler, Chicago; Riley, New York; Fairbanks, Boston; Morse, Boston, and Wells.

"Pleural Effusions in Children," by Dr. C. F. Wahrer, Fort Madison. Discussed by Drs. Cotton, Chicago; Butler, Chicago; Hanson, Cleveland, and Wahrer.

"Typhoid Fever in Children," by Dr. William J. Buter, Chicago. Discussed by Drs. Quigley, Tacoma; Farrbanks, Boston, and Butler.

THURSDAY, JULY 13—MORNING.

The session was called to order by the Chairman about 9:30 a. m.

"The After-Effects of Diphtheria on the Heart," by Dr. Franklin W. White, Boston, was read by the Secretary. Discussed by Drs. C. B. Campbell, Maine; H. M. McClanahan, Omaha; Butler, Chicago; Fairbanks, Boston; C. F. Wahrer, Fort Madison; H. E. Garrison, Dixon; Kate Lindsay, Boulder; W. J. Butler, Chicago, and Morse, Boston.

"The Management of Children with Typhoid Fever," by Dr. W. C. Hollopeter, Philadelphia. Discussed by Drs. John C. Cook, Chicago; Kate Lindsay, Boulder; Cotton, Chicago; Morse, Boston; H. E. Garrison, Dixon, and Hollopeter.

THURSDAY, JULY 13—AFTERNOON.

The Section was called to order by the Chairman about 2:30 p. m.

Dr. H. M. McClanahan, on behalf of the Executive Committee, made the following announcement of nominations: Chairman, Dr. W. C. Hollopeter, Philadelphia; Secretary, Dr. William J. Butler, Chicago; Delegate, Dr. C. F. Wahrer, Fort Madison.

The Secretary was authorized to cast the ballot for the nominations. The ballot was so cast.

The Secretary, Dr. J. Ross Snyder, of Birmingham, offered the following resolution:

"*Resolved*, by the Section on Diseases of Children of the American Medical Association, That the Chairman appoint a committee of three to ascertain the average number of hours and the relative importance given to the subject of pediatrics in the courses of instruction in the medical schools of the country; to investigate the various methods and the efficiency of instruction in this subject; and that this committee shall make a report to this body at its next annual meeting."

Dr. John C. Cook, of Chicago, moved that Dr. J. Ross Snyder be made chairman of such a committee. Carried.

The Chairman announced that he would appoint additional members of the committee later.

Dr. Cook moved that a vote of thanks be tendered the Secretary, Dr. J. Ross Snyder, for his work in making a list of the previous Chairmen and Secretaries of the Section to date. The motion was seconded by Dr. Wahrer and carried.

Section on Nervous and Mental Diseases.

TUESDAY, JULY 11—AFTERNOON.

The Section was called to order at 2:20 p. m. by the Chairman, Dr. J. H. McBride, Pasadena.

The Chairman's address was read by Dr. J. H. McBride, Pasadena.

The report of the Committee on Drug Addictions was read by the Chairman, Dr. Smith Ely Jeliffe, New York. On motion the report was accepted and the committee continued for one year.

"Defects of Will in Practical Medicine," by Dr. H. T. Pershing, Denver. Discussed by Drs. D. R. Brower, Chicago; Tomlinson, St. Peters, Minn.; G. R. Clark, Dearborn; Gilbert, Portland, and Pershing.

"Neurasthenoid Conditions—So-called Neurasthenia," by Dr. Robert Hessler, Logansport, Ind. Discussed by Dr. J. H. McBride, Pasadena.

No other authors on the program for Tuesday afternoon being present, on motion, it was decided to take up the program for Wednesday morning.

On motion, the Secretary read the paper by Drs. Charles K. Mills and T. H. Weisenberg, Philadelphia, on "The Localization of the Higher Psychic Functions, Especially with Reference to the Prefrontal Lobe." Discussed by Drs. Tomlinson, St. Peter's, Minn.; House, Portland, Ore., and J. H. McBride, Pasadena, Cal.

"Landry's Paralysis, with Report of Case," by Dr. Robert McGregor, Saginaw, Mich.

"Types of Multiple Neuritis," by Dr. David I. Wolfstein, Cincinnati.

These papers were discussed by Drs. H. T. Pershing, Denver; Brower, Chicago; House, Portland; G. R. Clark, Dearborn; H. G. Brainerd, Los Angeles; Tomlinson, St. Peter, Minn.; McGregor and Wolfstein.

WEDNESDAY, JULY 12—MORNING.

The session was called to order at 10 a. m. by the Chairman.

On motion, the Secretary read the paper by Dr. F. W. Langdon, Cincinnati, on "Nervous and Mental Manifestations of Prepernicious Anemia." Discussed by Drs. Wolfstein and Tomlinson.

"Periodic Paralysis," by Dr. G. E. Holtzapple, York, Pa. Discussed by Drs. Kilbaum and Holtzapple.

On motion, the following committee was appointed to nominate officers of the Section for the ensuing year: Drs. H. A. Tomlinson, St. Peter, Minn., Chairman; H. G. Brainerd, Los Angeles, Cal., and H. T. Pershing, Denver.

"The Tabetic Foot: Its Importance in the Causation of the Ataxia of the Lower Extremities," by Drs. Sidney I. Schwab and Nathaniel Allison, St. Louis (read by Dr. Schwab). Discussed by Drs. Pershing, Punton, Jeliffe, Wolfstein, Putnam, McBride, and Schwab.

"Clinical Reports of Some Cases of Hysteria," by Dr. C. C. Hersman, Pittsburg.

"The Psychopathic Manifestations of the Non-insane Psychoneuroses," by Dr. John Punton, Kansas City. Discussed by Drs. H. A. Tomlinson, St. Peter, Minn.; Smith Ely Jeliffe, New York; H. T. Pershing, Denver, and J. H. McBride, Pasadena.

WEDNESDAY, JULY 13—AFTERNOON.

The meeting was called to order at 2:40 p. m. by the Chairman.

"Public Care of the Insane," by J. M. Barstow, Council Bluffs, Iowa. Discussed by Dr. G. R. Clark, Dearborn, Mich.

"Psychosis of Morphinism," by Dr. T. D. Crothers, Hartford. Discussed by Drs. Punton, Clark, and Crothers.

"Comparison of the Quick and Slow Methods of the Treatment of Morphinism," by Dr. A. J. Pressey, Cleveland. Discussed by Drs. Crothers, Brainard, and Pressey.

"The Psychoses of Heart Disease," by Dr. William House, Portland, Ore.

The Committee on Nominations reported the following nominations, and the respective candidates were, on motion, duly elected: Chairman, Dr. Wharton Sinkler, Philadelphia; Secretary, Dr. David I. Wolfstein, Cincinnati; Executive Committee, Drs. J. H. McBride, Pasadena; H. T. Pershing, Denver, and F. W. Langdon, Cincinnati; Delegate, Dr. J. H. McBride, Los Angeles; Alternate, Dr. David I. Wolfstein, Cincinnati.

"The General Conditions Associated with Insanity; Their Correlation and Certain Deductions," by Dr. H. A. Tomlinson, St. Peter, Minn. Discussed by Drs. Clark, Brainard, McBride, Tomlinson, and House.

Section on Pathology and Physiology.

TUESDAY, JULY 11—AFTERNOON.

The Section was called to order at 2:00 o'clock by the Chairman, Dr. Winfield S. Hall.

The Chairman read his address, entitled "Pathologic Physiology, a Neglected Field."

"The Freezing Points of Blood and Urine in Pneumonia, with a Description of a New Method," by Dr. F. E. Schmidt, Chicago, was read by Dr. W. A. Bessesen, Chicago.

"Variations in the Ratio of Diameters of the Normal Chest at Different Ages. The Form of the Phthisical Chest," by Dr. W. A. Bessesen, Chicago. Discussion by Dr. S. Woods Hutchinson.

"The Influence of Chronic Passive Congestion and Cirrhosis of the Liver on the Connective Tissues of the Spleen," by Dr. Henry A. Christian, Boston. Discussion by Dr. W. Ophüls, San Francisco.

The Chairman announced that a number of papers had been sent in by their authors who had been, at the last moment, unable to be present. Each one, he said, represents a good deal of research work, and they will undoubtedly be interesting to a large portion of those gathered here.

Dr. C. A. Smith, Seattle, moved that these papers be read. Carried.

The paper of Dr. L. Breisacher, Detroit, Mich., entitled "Minimal Albumin Requirement in Health and Disease," was read by Dr. Henry A. Christian, Boston.

Dr. Brubaker read the paper by Dr. E. L. Whitney, Baltimore, entitled "Errors in the Determination of Free HCl in the Gastric Juice."

Dr. C. R. Krone, of Oakland, was called to the Chair, and Dr. Hall read the paper of Dr. J. C. Hemmeter, Baltimore, entitled "Are the Proteolytic and Milk Curdling Effects of the Gastric Juice Due to One and the Same Enzyme?"

"Mucocele of the Appendix," by Dr. Alfred Stengel, Philadelphia. Discussion by Drs. C. R. Krone, Oakland, Cal.; W. L. Bierring, Iowa City; New, Indianapolis, and Christian, Boston.

WEDNESDAY, JULY 12—MORNING.

The Section was called to order by the Chairman at 9:30 o'clock, and Dr. Krone, of Oakland, was called to the Chair.

The paper of Dr. F. R. Zeit, Chicago, entitled "Morphologic and Histogenetic Characteristics of Endothelial Tumors," was read by Dr. Rosenau, of Washington, D. C.

The paper of Dr. W. B. Cannon, Boston, entitled "Some Observations on Auscultation of the Abdomen," was read by Dr. H. A. Christian, Boston.

"Further Studies on Streptococcus Infection," by Dr. G. F. Ruediger, Chicago. Discussion by Dr. Rosenau.

Dr. H. A. Christian read a paper entitled "The Pathology of Varicella," by Dr. E. E. Tyzzer, Boston.

Dr. Christian read a paper by Mr. John Bryan, Jr., Boston, on "Myoma of the Esophagus."

Dr. Christian read an invitation from the British Columbia Medical Association, which meets July 18-19, at Vancouver, expressing the wish that a large number would attend that meeting.

The Chairman appointed as a nominating committee Dr. Krone, Oakland, Cal., Chairman; Dr. C. A. Smith, Seattle, and Dr. Wynn, Indianapolis.

Dr. Christian suggested the advantages to the Section if the By-Laws could be changed so as to allow members to read papers in more than one Section.

The matter was discussed at length by Drs. Christian, McFarland, Oettinger, Rosenau, and Hall, at the conclusion of which Dr. Oettinger moved the appointment of a committee of three, consisting of the Chairman, Secretary and Delegate (Drs. Hall, Christian and McFarland) to draft a resolution to be acted on tomorrow morning. Carried.

THURSDAY, JULY 13—MORNING.

The Section was called to order at 9:30 o'clock a. m. by the Chairman.

Dr. Bernard Oettinger, Denver, read a paper entitled "Methemoglobin as a Factor of Conservative Metabolism." Discussion by Dr. Kemp, Champaign, Ill.

Dr. G. T. Kemp, Champaign, Ill., read a paper entitled "The Blood Plates; Their Microchemistry, Physiology and Pathology." Discussion by Drs. Harlow, Boulder, Colo.; Oettinger, Denver; Krone, Oakland, Cal.; Rosenau, Washington, D. C.; Foss, Phoenix, Ariz.

The Secretary read the paper of Dr. Joseph H. Pratt, Boston, entitled "A Clinical Study of the Various Methods Employed of Determining the Number of Plates in the Blood." Discussion by Dr. Kemp, Champaign, Ill.

Dr. Ruediger, Chicago, read the paper of Dr. George H. Weaver, Chicago, entitled "Ulcero-Membranous Angina (Vincent's Angina) and Stomatitis." Discussion by Dr. Ophüls.

Dr. F. S. Lee, New York City, read a paper on "Temperature and Muscle Fatigue." Discussion by Dr. Kemp.

The Secretary read a paper by Dr. E. E. Southard, Boston, entitled "A Case of Cholesterin Stones in the Brain."

The Secretary also read "A Study of Brain Infections with the Pneumococcus," also by Dr. Southard. Discussion by Dr. Wynn.

Dr. Frank B. Wynn, Indianapolis, gave an exhibition of apparatus and read a paper on "Pathologic Report on a Case of Plexiform Neurofibroma." Discussed by Dr. Oettinger.

The Secretary read a paper by Dr. Martin H. Fischer, San Francisco, entitled "A Physico-chemical Theory of Fertilization."

ELECTION OF OFFICERS.

Dr. Krone, Chairman of the Nominating Committee, reported as follows:

Your committee recommends for election: For Chairman, Dr. Henry A. Christian, Boston; for Secretary, Dr. W. L. Bierring, Iowa City, Iowa; for Delegate, Dr. M. J. Rosenau, Washington, D. C.

The report was, on motion duly made and seconded, accepted and adopted.

Dr. Joseph McFarland announced that the proposed amendment to the by-laws, in order to give the right to read papers before more than one section, had received favorable consideration by the House of Delegates' committees and that favorable action was expected.

Dr. Wynn moved that the Section extend its thanks for the efficient conduct of the Chairman and Secretary and their courteous treatment toward the members of the Section.

Dr. Wynn put the motion and it was carried unanimously.

Marriages

PHILIP ROVNO, M.D., to Miss Julia Stark, both of Philadelphia, June 25.

LOUIS C. JACOBSON, M.D., to Mis Jessie Leone White of Elroy, Wis., May 6.

CHAUNCEY F. CHAPMAN, M.D., Chicago, to Miss Cora Kennard Pitcher, July 19.

J. M. SOKOL, M.D., Spencer, Iowa, to Miss Winifred Dando of Chatham, Ont., June 28.

PHILIP LEON BEREANO, M.D., to Miss Clara Dancis, both of New York City, July 16.

ALBERT MOORE BARRETT, M.D., Boston, to Miss Eliza Bowman of Clinton, Iowa, July 8.

SIMEON L. CARSON, M.D., Lower Brule, S. D., to Miss Carol H. Clark of Detroit, Mich.

ERNEST LESLIE WARD, M.D., to Miss Adelaide Leah Codogan, both of Osceola, Pa., June 28.

PAUL H. TETREAU, M.D., Larose, La., to Mrs. May Lambert Harang, at New Orleans, June 27.

SHERIDAN E. GARDNER, M.D., to Miss Blanche L. Irish, both of Mount Pleasant, Mich., June 24.

GERHARD HUTCHISON COCKS, M.D., to Miss Maud Eleanor Knapp, both of New York City, June 29.

WASHINGTON B. GROVE, M.D., surgeon U. S. Navy, to Miss Elizabeth Thompson, at Summit Point, W. Va., July 8.

Deaths

Oscar B. Harriman, M.D. Dartmouth Medical School, Hanover, N. H., 1861; first president of the Franklin County (Iowa) Medical Society; member of the Iowa State Medical Society, the Austin Flint Medical Society and State and National Associations of Railway Surgeons; a member of the State Board of Medical Examiners; coroner of Franklin County for 6 years; county physician for 10 years, and postmaster from 1885 to 1889, died July 9 from cerebral hemorrhage, after a prolonged period of ill health, aged 68.

Thomas G. Horn, M.D. St. Louis Medical College, 1868, a member of the American Medical Association; a pioneer physician of Colorado Springs, an earnest worker for good government, and a ready helper in all philanthropic work; ex-president of the Colorado State Medical Society; member of the El Paso County Medical Society; for 8 years a trustee of Denver University, died at his home in Colorado Springs from sciatica, July 14, aged 72.

Albert L. Macon, M.D. Medical Department of the University of Tennessee, Nashville, 1893, a member of the American Medical Association, and one of the most prominent young practitioners of Clarksville, Tenn., died at his home in that city, July 11, from typhoid fever, after a long illness, aged 32.

David P. Middleton, M.D. Kentucky School of Medicine, Louisville, 1860, surgeon of the Fourth Kentucky Volunteer Cavalry during the Civil War; several times a member of the Louisville Board of Education, died at his home in Louisville, from acute dysentery, July 4, aged 74.

Gustavus Hoepfner, M.D. University of Kiel, Germany, 1862, who has been suffering from heart trouble for a long time, died suddenly at his home in Davenport, Iowa, July 12, aged 69. The physicians of the city at a special meeting called July 13 adopted resolutions of sympathy.

Henry Mortimer Anderson, M.D. College of Physicians and Surgeons in the city of New York, for more than half a century a resident of Rome, Ga.; a surgeon in the Confederate service during the Civil War, died at the home of his daughter in Raleigh, N. C., June 26, aged 81.

Samuel W. Leeman, M.D. College of Physicians and Surgeons, St. Louis, 1895, professor of principles and practice of medicine in Baylor University College of Medicine, Dallas; a member of the state, district and county medical societies, committed suicide in his office in Dallas, Texas, by shooting himself through the head July 5.

William James Cox, M.D. Southern Medical College, Atlanta, Ga., 1892, Barnesville, Ga., a member of the American Medical Association, Medical Association of Georgia, and Jasper County Medical Society, died at a hotel in Madison, Ga., July 3, from an overdose of morphin.

Thomas G. Johnston, M.D. McGill University Medical Department, Montreal, 1871, of Sarnia; member of Parliament for West Lambton, twice mayor of Sarnia, died from septicemia following erysipelas, at Ottawa, Ont., July 4, after an illness of one month, aged 56.

Charles A. Carroll, M.D. University of Maryland School of Medicine, Baltimore, 1864, one of the distinguished family of that name, died suddenly in his room at the Church Home and Infirmary in Baltimore, July 14, from heart disease, aged 60.

James T. Edwards, M.D. New York University, New York City, 1857; assistant surgeon Ninety-seventh Ohio Volunteer Infantry during the Civil War, died at his home in Coschocton County, from general paralysis, after an illness of six weeks, aged 75.

John P. Sterrett, M.D. University of Virginia Medical Department, Charlottesville, 1843, died at his home in Pittsburg, Pa., July 18, aged 79. Three weeks before he had injured his knee and had been confined to bed on account of the accident.

William Kennedy Carroll, M.D. University of Maryland School of Medicine, Baltimore, 1873, died at Arrow, Colorado, July 18, from tuberculosis, aged 53. His remains were interred at Queenstown, Md., where he had resided for many years.

Eugene E. Holroyd, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1878, committed suicide at Nilwood, Ill., by taking arsenic, carbolic acid and strychnin, July 10, aged 57.

Westwood James Baker, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1873, of Fresno Cal., died at his old home, Courtland, Ala., July 3, after an illness of two years, from Bright's disease, aged 56.

George F. Fanning, M.D. Baltimore Hospital Medical College, New York City, 1877, died at his home in Port Jefferson, Suffolk County, L. I., July 6, after an operation for a malignant tumor of the stomach, aged 54.

Sydney Jones, M.D. McGill University Medical Department, Montreal, 1901, of Cleveland, Ohio, died at Lakeside Hospital in that city July 12, after an operation on the glands of the neck, after a long illness, aged 30.

John M. McDonald, M.D. Western Pennsylvania Medical College, Pittsburg, 1897, a member of the state, county and local medical societies, died at his home in Pittsburg, July 6, after a lingering illness, aged 29.

Alfred C. Blevins, M.D. University of Nashville Medical Department, 1861, surgeon of the Third Tennessee Infantry, C. S. A., during the Civil War, died at his home in Dayton, Tenn., July 25, aged 75.

Robert Dunn McIlvaine, M.D. University of Virginia, Medical Department, Charlottsville, 1885, died at his home in Petersburg, Va., July 13, from cerebral hemorrhage after an illness of four days, aged 41.

William O'N. Mendenhall, M.D. Rush Medical College, Chicago, 1870, sometime president of the Illinois State Medical Society, died at his home in Richmond, Ind., July 17, after a long illness, aged 71.

George B. Lockwood, M.D. Jefferson Medical College, Philadelphia, 1897, assistant physician at the Medfield (Mass) Insane Asylum, died July 14 at Albuquerque, N. M., after a long illness, aged 30.

James F. Graves, M.D. St. Louis Medical College, 1878, local surgeon of the Wabash Railway at Montgomery, Mo., shot himself through the heart at his residence July 4, and died instantly, aged 58.

Abraham Miller, M.D. Rush Medical College, Chicago, 1868, a retired practitioner of Bloomington, Ind., died at his home in that city, July 11, from cerebral hemorrhage, after a short illness, aged 71.

Mercer Stillwell Davie, M.D. Jefferson Medical College, Philadelphia, 1869, one of the organizers of the Dale County (Ala.) Medical Society, died recently at his home in Dotham (Ala.)

Earl Mathewson, M.D. College of Physicians and Surgeons in the City of New York, 1879, for many years medical examiner of Durham, Conn., died at his home in that town, July 6, aged 55.

Charles W. Crary, M.D. Jefferson Medical College, Philadelphia, 1871, surgeon-major in the Civil War, died at his home in Chicago, July 13, from cerebro-spinal paralysis, after a long illness, aged 70.

William P. Ewing, M.D. Jefferson Medical College, Philadelphia, 1846; formerly president of the West Virginia State Board of Health, died at his home in Charleston, W. Va., July 19, aged 83.

Horace Lathrop, M.D. Jefferson Medical College, Philadelphia, 1852, died at his home in Cooperstown, N. Y., July 11, from cerebral hemorrhage, after an invalidism of twelve years, aged 80.

Henry Lanciaux, M.D. University of the Victoria College, Coburg, Ont., 1890, died at his home in Manville, R. I., June 30, from consumption after an illness of three months, aged 41.

B. B. Johns, M.D. (years of practice, Indiana), for many years a member of the state legislature, died at his home in Gentryville, Ind., July 7, after a prolonged illness, aged 65.

Charles Lowry, M.D. Pennsylvania, 1863, for two years secretary of the Kansas State Board of Health, died at his home in Topeka, July 11, from kidney disease, aged 64.

Felix A. Gillespie, M.D. Medical College of Alabama, 1889, mayor of Hanceville, Ala., died at his home in that city, July 17, from typhoid fever, after an illness of four weeks.

George J. Ahren, M.D. New York University, New York City, 1895, formerly house surgeon at St. Francis' Hospital, New York City, died in that institution July 4, aged 34.

Lemuel H. Hammond, M.D. Albany Medical College, 1858, of Worcester, Mass., died at the home of his daughter in Waterbury, Conn., after a short illness, aged 69.

William H. Lyne, M.D. Medical College of Virginia, Richmond, died in the Memorial Hospital, Richmond, July 16, from complications following appendicitis, aged 32.

Charles Thomas Harris, M.D. University of Maryland School of Medicine, Baltimore, 1904, of Bethel Hill, N. C., died at Roxboro, N. C., July 6, from typhoid fever.

James A. McKinney, M.D. Rush Medical College, Chicago, 1895, died at his home in Grand Valley, Colo., July 7, from heart disease with complications, aged 35.

Clarence G. Keefer, M.D. Baltimore University School of Medicine, 1892, of Baltimore, died at the City Hospital, Baltimore, July 11, after a long illness.

James D. Burch, M.D. Kentucky School of Medicine, Louisville, 1864, died suddenly at his home in Amora, Texas, June 25, from heart disease, aged 67.

Wilber Kelley, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1882, died from cerebral hemorrhage after an illness of 12 hours, aged 47.

John A. McGee, M.D. University of Louisville Medical Department, 1876, died at his home in Rice, Texas, July 1, after a lingering illness.

Revaux O. Dieuis, M.D. University Medical College of Kansas City, Kan., 1897, was found dead in his room at Terrell, Tex., July 6, aged 29.

Victor G. R. J. Rehm, M.D. Jefferson Medical College, Philadelphia, 1884, died at his home in Philadelphia, from nephritis, July 22, aged 47.

Daniel Howes, M.D. Jefferson Medical College, Philadelphia, 1864, died at his home in South Lyon, Mich., July 4, after a brief illness.

Anna Frances Donoghue, M.D. New York, 1904, died suddenly at her home in New York, July 19, from heart disease, aged 32.

C. Wright Lindsey, M.D. Medical Department Arkansas University, Little Rock, 1900, died recently and was buried July 14.

Edwin D. Simpson, M.D. College of Physicians and Surgeons, New York, 1874, died at his home in New York City, June 23, aged 50.

Paul Hauser, M.D. Griefswald, Germany, 1872, died at his home in Brooklyn, N. Y., July 9, from senile debility, aged 71.

J. Harrison Hartwell, M.D. Jefferson Medical College, Philadelphia, died at his home in Philadelphia, June 25, aged 77.

Sarah A. Marshall, M.D. Chicago, 1883, of Elgin, Ill., died in Oak Park, Ill., July 14, after a long illness, aged 61.

John T. Keats, M.D., died at Baltimore June 19, aged 70.

Abroad.

Herman Nothnagel, M.D., the great Vienna clinician, instructor and investigator, died suddenly, July 6, from the effects of arteriosclerosis of the heart, aged 64. He had attended to his daily round of professional duties, not returning home from his last call till half past ten, and the heart failure occurred soon after. He was born in Brandenburg and became assistant to Leyden in 1865, then assumed a professorship at Freiburg and later at Jena and was called in 1882 to the chair of medicine at Vienna which he made world famous by his incumbency. He has been a member of the Austrian House of Lords since 1902, and has had all kinds of honors heaped on him. Many of his works are as well known in this country as abroad, especially his studies on the physiology and pathology of the nervous system, on epilepsy, and on intestinal and peritoneal affections. His saying that "only a good man can be a good physician" is one of the axioms of the profession nowadays, and well illustrates his own view of life.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

PROFESSIONS ENTITLED TO GRATUITIOUS SERVICES.

ARKANSAW SUBSCRIBER asks what professions are generally considered entitled to treatment without charge.

The Principles of Ethics say that gratuitous services should be limited to practicing physicians, their immediate family dependents, persons in indigent circumstances, and certain public duties (sanitation and public hygiene). Dentists, druggists, nurses, etc., are usually given a discount by physicians who live in the same neighborhood, and they usually reciprocate. When members of these related professions are given or give *free* service, it is usually not because of the fact that their professions are related, but because of previous reciprocal relations, mutual understandings or close business relations; for example, between the physician and the pharmacist over whose store the former has his office, between the dentist and the physician to whom he usually sends his patients who need systemic treatment, etc. The nurse, however, is not expected to give free services, because her work usually takes all her time, while that of the physician is one item in a day's work. Similar questions have been answered in THE JOURNAL, March 5, 1904, p. 662; March 26, 1904, p. 844; Feb. 4, 1905, p. 405.

RESEARCH BY THE COUNTRY PRACTITIONER.

WARDSVILLE, ONT., July 18, 1905.

To the Editor:—I write to ask you to give some of the problems that might be attacked by a general practitioner of medicine in the country. It is interesting work to read and to apply the works of others. I think it well to do some original investigation ourselves, and with a little direction our spare time might be put to good use. W. H. RENNIE.

ANSWER.—It is exceedingly difficult, if not impossible, to give advice of real value in regard to problems that may be attacked by physicians in general country practice without knowing something of the qualifications, the equipment and the tastes of the prospective investigator. At the present time progress in research as ordinarily understood means, at least as a general rule, expertness to a reasonable degree in some one special method of investigation. Roughly, the methods now in vogue in medical research may be divided into four overlapping groups, to-wit, chemical, bacteriologic, anatomic (gross and microscopic), and, last but not least, clinical. Consequently, in order to suggest actual problems for independent work, it would be necessary in the individual case to know within which one of these main groups the work would have to be done. We would, therefore, make the general suggestion that persons who, like the writer of this request, feel interested in original work, place themselves in direct communication with some known investigator and teacher in the field in which each person feels that his own work must lie by virtue of the special circumstances in his case. In the case of the majority of the general practitioners it is most likely that the kind of investigative work nearest at hand would come under the general heading of *clinical*. There is no lack of interesting and valuable material for clinical study. Unusual, obscure, remarkable instances of disease occur everywhere. Circumscribed outbreaks of infectious diseases under conditions that are relatively simple and transparent always merit careful study with special reference to peculiar features as regards either manifestation or causation. Unusual manifestations of familiar diseases often invite critical observation. The complete and careful study of series or groups of cases always proves instructive and valuable. Now it is to be noted that at the present time clinical observation in order to be complete and reliable, in many cases requires the use of chemical, bacteriologic and anatomic methods. Hence every physician who is progressive in his tendencies, keen in method, and determined to get to the bottom of the many knotty problems presented by his cases, must have some kind of clinical laboratory, the more complete the better, and the more familiar with clinical laboratory technic the more efficient will be his work, other things being equal. It would seem that many practitioners might employ their spare time to good advantage for a period at least in perfecting themselves in clinical laboratory methods so that they may feel that their own results merit confidence. For many a thorough preliminary course under competent teachers would be desirable as a basis for further work. We do not hereby imply that old-fashioned clinical observation and reflection should be abandoned. Far from it. They remain of the same fundamental value as heretofore; both are to be extended, sharpened and controlled, however, by physical and chemical aids. It must be clear that to-day diagnosis, for instance, often rests on bacteriologic and chemical factors, of the existence of which our forefathers did not dream. Now we believe that it is not an unsurmountable task for general practitioners to master modern methods of clinical observation to such an extent that they may undertake investigative work in connection with their own material. This important subject can not be pursued any further for the present. Whatever the method, whatever the subject, the one thing always necessary to accomplish anything is work.

State Boards of Registration

COMING EXAMINATIONS.

Nebraska State Board of Health, State House, Lincoln, Neb., August 9-10. Secretary, Geo. H. Brash, Beatrice.

Corrections in Minnesota June Examination.—In THE JOURNAL July 15, p. 209, we stated that the general average attained by all graduates of the University of Minnesota who passed, was 79; this should have been 81.6. The average given for graduates of Hamline University who passed was given as 82.3 and should have been 82.03. These deductions were not made by the secretary of the Minnesota board and he should not be blamed for the error.

New Jersey June Report.—Dr. E. L. B. Godfrey, secretary of the State Board of Medical Examiners of New Jersey, reports the written examination held at Trenton, June 20-21, 1905. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 72' of whom 55 passed and 17 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
University of Michigan	(1905)	82.8
Woman's Med. Coll. of Pennsylvania	(1905)	76.8
University of Pennsylvania (1885) 87; (1895) 77.8; (1905) 86, 76.2, 89.6; (1901) 85.2; (1902) 82.8.		
Medico-Chirurgical Coll. Philadelphia (1905) 76.5, 83.8, 81.6, 83.2, 77.8, 89.3, 87.7; (1901) 86.8; (1904) 80.1; (1897) 79.2.		
Jefferson Med. Coll. (1901) 86.4; (1904) 82.1, 87.3, 84.1; (1905) 83.6, 75.1, 83.3, 85.4, 78.3, 77.6, 78.7, 75.8.		
Harvard University	(1893) 83; (1902)	79.6
Columbia University (1904) 80.2; (1905) 78.3, 82.8, 86.2, 91.3, 86.6, 82.2.		
College of P. and S., Baltimore (1905) 78.1, 82.3, 79.4, 79.7, 81		
Baltimore Med. Coll.	(190) 75.5; (1904)	76.3
Baltimore Med. Coll.	(1905) 75.5; (1904)	76.3
Cornell University	(1905)	87.2
Hahnemann Med. Coll. Philadelphia (1905) 78.5,, 85.1; (1904) 75.3, 88.5.		
University of Naples	(1898)	62*
Long Island College Hospital	(1900)	80.1
FAILED.		
Medico-Chirurgical Coll., Philadelphia (1905) 73.1, 73; (1903) 71.9.		
Royal University of Munich	(1904)	65.1
University of Baltimore	(1904) 71.7, 66.8, 71.3,	60.3
Baltimore Med. Coll.	(1905) 68.5,	65.3
University of Louisville	(1905)	68.8
Leonard Med. Coll. N. C.	(1905)	71.4
Hahnemann Med. Coll., Philadelphia		73.8
College of P. and S., Boston	(1904)	72.1
Long Island College Hospital	(1905) 73.6; (1894)	56.5
Hahnemann Med. Coll., Chicago	(1879)	71.2

The general average attained by all representatives of the Medico-Chirurgical College who passed was 82.6; of the Uni-

versity of Pennsylvania, 83.5; of Jefferson Medical College, 81.4; of Columbia University, 83.5.

* Second examination.

Delaware June Report.—Dr. P. W. Tomlinson, secretary of the State Board of Medical Examiners of Delaware, representing the President and Fellows of the Medical Society of Delaware, reports the written examination held at Dover, June 20-22, 1905. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The number of applicants examined was 20, of whom 14 passed and 6 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Baltimore University	(1902)	77*
Medico-Chirurgical Coll., Philadelphia	(1904) 81; (1905) 80, 84	
Baltimore Med. Coll.	(1904) 81.3; (1905) 76.2, 77.1,	77.6
Jefferson Med. Coll.	(1905) 84.3, 85.1,	82.1
University of Pennsylvania	(1867) 82.7; (1905)	90.5
Western Pennsylvania Med. Coll.	(1897)	92.3

FAILED.

Baltimore University (1902) 60;** (1904) 49.8;† (1905) 58, 72.4, 58.3.
Maryland Med. Coll. (1905) 57.9‡

* Has continued studies.
** Failed in examination in 1904.
† Intoxicated during examination.
‡ Caught with a book by one examiner, who gave him 0 in two subjects.

The State Medical Examining Board, representing the Homeopathic Medical Society of Delaware State and Peninsula, held a written examination at Wilmington, June 20-22, 1905. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. Four candidates were examined, all of whom passed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Southern Homeo. Med. Coll., Baltimore	(1905)	84.1, 94.2
Hahnemann Med. Coll., Philadelphia	(1905)	89.3, 87.2

Utah July Report.—Dr. R. W. Fisher, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, July 3-5, 1905. The number of subjects examined in was 20; total number of questions asked, 86; percentage required to pass, 75. The total number of candidates examined was 17, of whom 12 passed and 5 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Coll. of Med. and Surg., Chicago	(1903)	78*
Rush Med. Coll., Chicago	(1905) 86, 88; (1904)	81
American Med. Coll., St. Louis	(1905)	80*
American Med. Coll., St. Louis	(1905)	80
Washington University	(1890)	77
College of P. and S., Chicago	(1905)	85, 80
Northwestern University	(1905)	84, 79
Royal Coll. of Phys., London	(1900)	79

FAILED.

College of P. and S., Chicago	(1894)	53
Marion Sims-Beaumont Med. Coll.	(1905)	69
Western Reserve University	(1888)	69
University of Kentucky	(1903)	73
University of Denver	(1884)	72

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending July 22, 1905:

Lyster, W. J. L., asst.-surgeon, granted ten days' leave of absence.

Palmer, Fred W., asst.-surgeon, relieved from duty at Jefferson Barracks, Mo., and ordered to General Hospital, Fort Bayard, N. M., for duty.

Borden, Wm. C., surgeon, ordered to proceed from this city to Boston and Albany,, via Philadelphia, on business pertaining to construction of newer hospitals.

Hallock, H. M., surgeon, promoted major and surgeon, to rank from July 1, 1905.

Davidson, W. T., asst.-surgeon, ordered to report to Lieut.-Col. George H. Torney, deputy-surgeon-general, on Aug. 1, 1905, at Army General Hospital, Presidio of San Francisco, Cal., for examination for promotion.

Harris, J. R., asst.-surgeon, reports on thirty days' leave of absence from Philippine Islands.

Godfrey, G. C. M., asst.-surgeon, relieved from further station in New York City, N. Y., and ordered to Fort McPherson, Ga., for duty.

Banister, Wm. B., surgeon, left Jefferson Barracks, Mo., with recruits to Fort Assiniboine, Mont.

Ames, Roger P., contract surgeon, relieved from duty at Fort McIntosh, Texas, and ordered at expiration of present leave of absence to duty at Fort DeSoto, Fla.

Davis, Oscar F., contract surgeon, relieved from duty at Fort DeSoto, Fla., and ordered to duty at Jefferson Barracks, Mo.

Hicks, John R., contract surgeon, granted leave of absence, to include July 25.

Watkins, Victor E., contract surgeon, ordered home, Washington, D. C., for annulment of contract, and granted leave of absence for two months.

Foster, Douglas E., dental surgeon, relieved from duty at Fort Jay, N. Y., and ordered to his home for annulment of contract. Granted leave of absence for twenty days.

Jones, George H., contract surgeon, left Fort Fremont, S. C., on leave of absence for three months, fifteen days.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending July 22, 1905:

Braisted, W. C., surgeon, detached from special duty in connection with the Russo-Japanese war and ordered to the Navy Department.

Marshall, E. R., and Bunger, C. B., asst.-surgeons, appointed assistant surgeon, with rank of lieutenant (junior grade), from July 7, 1905.

Mears, J. B., and F. H. Brooks, asst.-surgeons, appointed assistant surgeons, with rank of lieutenant (junior grade) from July 14, 1905.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital service for the seven days ending July 19, 1905:

Sawtelle, H. W., surgeon, to report at Washington, D. C.

Mead, F. W., surgeon, granted leave of absence for one month, from August 1.

Blue, Rupert, P. A. surgeon, to proceed to Ocean City, Md., Chincoteague, Wachapreague and Cape Charles City, for the purpose of making a physical examination of keepers and surfmen of the Life Saving Service.

Cofer, L. E., P. A. surgeon, granted leave of absence for two months from September 9.

Foster, M. H., P. A. surgeon, granted extension of leave of absence for ten days, from July 11.

Richardson, T. F., P. A. surgeon, to proceed to Brunswick quarantine and assume temporary charge during absence on leave of Assistant Surgeon J. T. Burkhalter.

Goldberger, Jos., P. A. surgeon, to proceed to Atlantic City, N. J., for the purpose of making a physical examination of keepers and surfmen of the Life Saving service.

Berry, T. D., P. A. surgeon, to proceed to Point Pleasant and Tuckerton, N. J., for the purpose of making a physical examination of keepers and surfmen of the Life Saving Service.

Burkhalter, J. T., assistant surgeon, granted leave of absence, on account of sickness, for one month or so much thereof as may be necessary, effective on date of arrival of relief.

Ebert, H. G., assistant surgeon, granted leave of absence for two months, from August 4.

Adams, F. B., acting assistant surgeon, granted leave of absence for seven days.

Bean, L. C., acting assistant surgeon, granted extension of leave for five days, from July 21.

Gruver, F., acting assistant surgeon, granted leave of absence for thirty days, from August 15.

McConnell, A. P., acting assistant surgeon, granted leave of absence for six days, from July 20.

Savage, W. L., acting assistant surgeon, granted leave of absence for thirty days, from August 7.

Welden, W. A., acting assistant surgeon, granted leave of absence for thirty days, from August 15.

Williamson, S. D., acting asst.-surgeon, granted leave of absence for eight days, from July 22.

Carlton, G. G., pharmacist, granted leave of absence for twenty-nine days, from July 24.

Hall, L. P., pharmacist, department letter of June 23, 1905, granting leave of absence for thirty days, from July 10, amended to read thirty days, from August 4.

Keen, W. H., pharmacist, granted leave of absence for twenty-four days, from July 18.

PROMOTIONS.

Long, J. D., asst.-surgeon, commissioned (recess) as passed assistant surgeon, to rank as such from April 14, 1905.

Francis, Edward, asst.-surgeon, commissioned (recess) as P. A. surgeon, to rank as such from June 23, 1905.

McCoy, G. W., asst.-surgeon, commissioned (recess) as P. A. surgeon, to rank as such from June 27, 1905.

Warren, B. S., asst.-surgeon, commissioned (recess) as P. A. surgeon, to rank as such from June 25, 1905.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the period from June 30, to July 15, 1905:

SMALLPOX—UNITED STATES.

District of Columbia: Washington, July 1-8, 3 cases.
Florida: Jacksonville, July 1-8, 1 case.
Illinois: Chicago, July 1-8, 15 cases, 4 deaths; Danville, June 27-July 10, 3 cases.
Indiana: Southbend, June 24-July 8, 3 cases, 1 death.
Louisiana, New Orleans, June 24-July 8, 7 cases (1 imported)
Michigan, Grand Rapids, July 1-8, 7 cases, 1 death.
Minnesota: Nineteen counties, June 12-19, 61 cases; ten counties, June 19-26, 50 cases.
Missouri: St. Louis, June 24-July 1, 1 case.
Nebraska: Omaha, July 1-8, 2 cases.
New York: New York, June 24-July 1, 1 case; Rome, July 1-8, 1 case.
North Dakota, Nine counties, May 1-31, 55 cases.
Pennsylvania: York, July 1-8, 1 case.

South Carolina, Greenville, July 24-July 1, 1 death.
Tennessee: Memphis, July 1-8, 1 case.
Wisconsin: Appleton, July 1-8, 2 cases; La Crosse, June 24-July 1, 1 case; Milwaukee, June 24-July 8, 17 cases.

SMALLPOX—FOREIGN.

Africa: Cape Colony, May 27-June 3, 2 cases.
Belgium: Brussels, June 10-17, 1 death.
Brazil: Bahia, May 13-27, 14 cases; Rio de Janeiro, May 28-June 11, 19 cases, 9 deaths.
China: Hongkong, April 30-May 6, 3 cases.
Colombia, Cartagena, June 10-17, 1 case, 1 death.
France: Paris, June 10-24, 31 cases, 4 deaths.
Great Britain: Birmingham, June 17-24, 1 case; Bristol, 3 cases; London, June 10-24, 4 cases; Sheffield, June 17-24, 1 case.
India: Calcutta, May 27-June 3, 2 deaths; Madras, 2 deaths.
Italy: Catania, June 15-22, 4 deaths; Messina, June 17-24, 3 cases.
Mexico: City of Mexico, June 17-24, 15 cases, 9 deaths.
Russia: Odessa, June 10-17, 13 cases, 3 deaths; St. Petersburg, June 3-17, 14 cases, 3 deaths.
West Indies: Grenada, June 1-15, 4 cases.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, May 28-June 11, 85 cases, 34 deaths.
Ecuador, Guayaquil, June 6-13, 4 cases.
Guatemala: Livingston, June 21-July 6, 12 cases, 5 deaths.
Mexico: Tehuantepec, June 25-July 1, 1 case, 1 death; Tierra Blanca, June 18-July 1, 3 cases, 1 death; Vera Cruz, July 11, 1 case.
Panama: Colon, June 23-28, 4 cases, 1 death; Panama, June 23-28, 6 cases, 1 death; Paraiso, June 23-28, 1 case.

CHOLERA—FOREIGN.

India: Calcutta, May 27-June 3, 9 deaths.

PLAGUE—FOREIGN.

Africa: East London: May 20-27, 3 cases, 1 death; King Williams Town, 1 case; Queenstown, 3 cases, 1 death.
Arabia: Aden, June 2-9, 1 death.
Brazil: Rio de Janeiro, June 4-11, 1 case.
China: Hongkong, April 30-May 6, 8 cases, 7 deaths.
India: Calcutta, May 27-June 3, 84 deaths; Madras, May 27-June 2, 1 death.
Peru: Payta, June 14, 2 cases, 1 death.

Society Proceedings

AMERICAN SURGICAL ASSOCIATION.

Twenty-sixth Annual Meeting, held at San Francisco, July 5-7, 1905.

Concluded from page 254.

The President, DR. GEORGE BEN JOHNSTON, in the chair.

End Results in Surgery of the Kidney.

DR. ALBERT VANDER VEER, Albany, N. Y., read a paper based on a review of 123 operations. There were 23 cases of movable or floating kidney, exclusive of those in which excision of the capsule for neuralgia, examination for stone, and decapsulation for Bright's disease is done. Nineteen of these cases occurred in women, about two-thirds of whom were married, the lesion being on the right side. There were 4 males, the lesion also occurring on the right side and the entire number recovering. One patient required removal of the kidney four years after for abscess of the pelvis and stone; the operation was followed by a good recovery. Dr. Vander Veer next presented a series of 24 cases of nephrotomies in which there was a surgical lesion of the kidney, grouped under the heading of pyelitis, pyonephrosis, pyonephritis, or ascending pyelonephrosis. The series was divided as follows: Male, right side, 2 recovered, 1 died. Male, left side, 6 recovered. Nine of these patients finally required nephrectomy, one case resulting in death. Of the remaining 15 patients all made good recoveries except one who, after a period of four years, had a slight sinus, not deep, no pus, patient in excellent condition. The other patient recovered from the kidney complication, but developed a pelvic abscess which is still draining and she is gradually losing ground. In the cases of nephrectomies for hydronephrosis there were 8, as follows: Male, right side, 2 recovered. Female, right side, 3 recovered. Female, left side, 2 recovered, 1 died. He cited 2 cases of hydronephrosis in young women who were entirely cured by simple aspiration. Of decapsulation of the kidney for nephritis there were 2 cases ending in recovery.

DISCUSSION.

DR. WILLIAM J. MAYO, Rochester, Minn., asked Dr. Vander Veer whether he removes the ureter or considers it necessary to remove it in cases of tuberculosis of the kidney. Also whether any of the cases in which nephrotomy for tuberculosis of the kidney was performed have been followed by permanently good results. Recently Dr. Mayo has gone over the histories of some 36 nephrectomies for tuberculosis of the kidney and has found that a large number of people who are supposed to have tuberculosis of both kidneys in the early stage have only one kidney involved. Careful examination has shown in the majority of these cases, according to his recent experience that the tuberculosis is confined to one kidney. He thinks that a large majority of cases of tuberculosis of the kidney are one-sided to start with; that his experience, gained largely by postmortem examinations, is that the second kidney becomes involved at the time of death, and that, therefore, he has postmortem rather than living evidence of the fact that in the early stages the percentage of cases in which tuberculosis of the kidney is bilateral is small.

DR. N. B. CARSON, St. Louis, Mo., mentioned a case in which a diagnosis of floating kidney was made by several good surgeons, and he operated with the intention of fixing the kidney. He found the kidney slightly movable, but not floating. Later an eminent surgeon said the case was one of floating kidney, even after he told the surgeon that he had already fixed the kidney. Later he operated again and instead of a floating kidney found a floating right lobe of the liver. The gall bladder was enlarged to the size of a kidney. This was fixed to the liver and contained a number of stones. This floating lobe was removed and patient made a good recovery.

DR. ARCHIBALD MCLAREN, St. Paul, Minn., mentioned the ease with which a kidney can be removed after resecting the twelfth rib. He said that he got this idea from Dr. Mayo. He tried this procedure in a recent case and found he could do the operation more easily, although he opened the pleura, which was readily plugged with iodoform gauze.

DR. VANDER VEER said, in reply to Dr. Mayo, that the tuberculosis was confined to one kidney in his cases, and that he has no record of bilateral kidney tuberculosis. In the first case in which he operated he did not remove the ureter, and in one case he had to do a secondary operation on account of relapse. He has seen an almost exact duplicate of Dr. Carson's case in that there was a sarcoma which involved the gall bladder and right lobe of the liver.

Non-Parasitic Cysts of the Spleen.

DR. CHARLES A. POWERS, Denver, Colo., stated that this subject has a twofold origin: 1, the few and comparatively recent clinical reports; 2, the somewhat more numerous accidental postmortem findings. In September, 1895, a young man aged 18, who presented a large right-sided abdominal cyst, was referred to him. The mass was of four years' growth. There had been a gradual loss of flesh and strength, anorexia, headache and general pressure symptoms. Fluctuation was plain. The diagnosis of splenic cyst seemed positive. A free incision was made over the prominent part of the tumor, the walls of which were found to be about one-half inch thick, semi-cartilaginous and solidly adherent to all the adjacent structures. Extirpation seemed impossible. Later autopsy findings confirmed this. The single cyst held several liters. A posterior incision was made with through drainage. The walls of the cyst did not collapse and the patient died of septic absorption from the cyst wall on the twelfth day. The anatomic diagnosis was hemorrhagic cyst of the spleen. From the autopsy findings Dr. Powers could not see how the cyst could have been successfully extirpated. He presented a brief analysis of 32 tabulated cases. In considering the treatment he spoke of puncture, incision and injection, incision and drainage, resection of cyst and splenectomy.

Status Lymphaticus and the Ductless Glands.

DR. ROSWELL PARK, Buffalo, N. Y., defined the term status lymphaticus and stated that the reason for bringing the subject before a body of surgeons is because the condition itself has so much to do with the question of toleration of anesthetics, and the matter of repair of wounds, that it really is one of exceeding importance. Not a few cases of sudden death during and after operation are to be explained by the abnormalities constituting this condition. These have usually been attributed to the anesthetic or to the anesthetist, and it may

be that had the latter appreciated all the dangers offered by the condition he would have guarded his anesthetic or perhaps abstained from giving it. The anesthetist is not always to blame because he is often called in without previous knowledge of the patient, it being really the function of the medical attendant carefully to study the case and to determine its peculiarities. Lymphoid tissue throughout the body seems to increase as the thymus normally disappears. In infantile marasmus the thymus has usually completely and permanently disappeared, its condition being a fair index as to general nutrition. It is hypertrophy rather than atrophy of the thymus which most interests the surgeon, since those individuals who die suddenly and unexpectedly usually have an enlarged thymus. There certainly exists strange relationships between the pituitary body, the thymus, the thyroid, the coccygeal body, the testes, the ovaries and perhaps the bone marrow. In this list the recent researches relative to the parathyroids should also be included. A clearer recognition of the function of the latter seems to have changed the whole aspect in which we should regard Graves' disease, making it quite probable that this condition is due rather to atrophy of the parathyroids than to excess of the thyroid or of its secretion. In the ordinary forms of cystic goiter, in which thyroid secretion is not increased, the symptoms of Graves' disease are lacking. It is usually after removal of the thyroid proper that the opposite symptoms of exophthalmic goiter appear—i. e., myxedema and cachexia, while when the parathyroids are taken away the peculiar symptoms of exophthalmic goiter appear. Status lymphaticus apparently has more to do with the thymus than with any other isolated organ. Thymus extract produces in animals a fall of blood pressure with acceleration of the heart, and, in fatal doses, collapse. Thymus enlargement may cause death by pressure on important structures, even distinct from the trachea. Thymic asthma, a condition known for some time, is one in which death sometimes occurs most unexpectedly and quickly. In these cases not only is the thymus enlarged, but there is a general hyperplasia of the lymphatic tissue with enlargement of the lymph nodes and of the spleen. The relations between status lymphaticus and rickets are frequent and pronounced. Nearly all cases of the former display the ordinary clinical evidences of the latter. The participation of the lymphatic system is most casually apparent in the involvement of the faucial, laryngeal and lingual tonsils, i. e., the so-called adenoids of the throat specialists. It is notable that it is in these cases that death most often occurs during or after anesthesia.

Thymic asthma, Dr. Park stated, is practically the same thing as laryngismus stridulus. The occurrence of this in children ought always to serve as a warning as well as an indication for careful study and treatment. Should chloroform be given to such a patient inadvertently or unnecessarily, the agent will not be nearly so responsible for the death as the practitioner who employs it. The condition is to be recognized by the ordinary evidences of rickets which are usually present, by generalized enlargement of the lymph nodes, by the presence of adenoids in the nasopharynx, by a history of laryngismus stridulus or of special liability to spasm of the glottis, by perceptible enlargement of the thymus or by notable enlargement of the thyroid or spleen. In the young these conditions simulate cretinism. Such a clinical picture should serve as a warning and should make one abstain from the use of anesthetics unless absolutely necessary, while it should also prompt carefully directed treatment. This treatment should consist in careful attention to elimination, as well as to nutrition, while thymus or pituitary extract should be administered internally, as well as the glycerophosphates or some similar tonic. If it should be necessary to clear out the nasopharynx in such a case the parts should be first desensitized by cocain, to which a little adrenalin may be added, even previous to beginning anesthesia. If the patient is known to be subject to glottic spasm, the surgeon should be prepared to do a tracheotomy on an instant's notice, and especially so if the thymus be perceptibly enlarged. It may be necessary to use a long tracheal tube. Operations of convenience should be postponed until the patients can be carefully built up. Operations of necessity may be practiced with the above precautions, while in cases of impending or actual emergency one may depend on artificial respiration after tracheotomy and the use of adrenalin.

Patent Urachus.

DR. GEORGE TULLY VAUGHAN, Washington, D. C., explained the defective development in embryology which leads to the formation of patent urachus and of Meckel's diverticulum. He divided cases of patent urachus into the complete, blind, blind internal and blind external, and into congenital and acquired varieties, and explained the occurrence of some cases of acquired patent urachus by the pressure of urine in the bladder from obstruction to its normal outflow, causing the small valve which guards the bladder opening of the urachus to give way and to permit urine to enter the urachus, when, if infection takes places, abscess forms, and pus breaks through the umbilicus or discharges into the bladder. He briefly reviewed 52 cases reported in the literature and added one case of his own; of this number 38 patients were operated on, with 32 recoveries and 3 deaths, and in 3 cases the result was not reported. He divided the methods which have been tried for closing the urachus into eight classes as follows: 1. The application of caustic or of actual cautery to the umbilical opening. 2. The use of the cautery and of ligatures or sutures. 3. The use of ligature or suture only. 4. Plastic operations, the application of a flap of skin to close the opening. 5. To open or to slit up the urachus, curette or cauterize and pack. 6. Removal of sources of irritation from the urachus, such as stones, pus, etc., and keeping the parts clean. 7. Removal of obstruction to the flow of urine from the bladder through the urethra, as a tight prepuce, strictures of the urethra, hypertrophy of the prostate, and tumors or stone in the bladder. 8. Extirpation or dissecting out of the urachus and sewing or ligating the part next to the bladder, after the manner of treating the appendix in appendectomy. Dr. Vaughan does not approve of the method of simply closing the umbilical end of the fistula, lest an infected suppurating area be left which may cause septicemia or peritonitis. He considers slitting open and packing the abscess cavity a rational operation, but thinks the operation of election is to dissect out the urachus with the entire diseased area. Dr. Vaughan used this method in his case, a man of 40, who had acquired patent urachus since the age of 17. A month after the patent urachus was cured, it was necessary to perform nephrolithotomy on the right kidney, and nine months later the same operation on the left kidney.

Summary of Fractures of Spine Treated at Boston City Hospital from 1864 to 1905.

DR. H. L. BURRELL, Boston, concluded: 1. Fractures of the spine may well be divided into two classes—first, fractures of the spine with injury to the cord; and, second, fractures of the spine without injury to the cord. 2. It is not best to decide what the treatment of an individual fracture of the spine should be from the statistics, because the lesion varies so widely. 3. In many cases of fracture of the spine it is impossible to state primarily whether the cord is crushed or pressed on by bone, blood, or exudate, except by an open operation. 4. Only by the persistence of total loss of reflexes, complete insensibility to touch and pain, and motor paralysis below the level of the lesion can total transverse destruction of the cord be diagnosed. 5. If pressure on the cord is allowed to remain for many hours, irreparable damage to the cord may take place. 6. Unless it is perfectly clear that the cord is irremediably damaged an open operation to establish the condition of the cord and to relieve pressure is imperative as soon as surgical shock has been recovered from. 7. In certain cases of fractuure of the spine, when the cord is not injured, but is liable to injury from displacement of the fragments of a vertebra, rectification of the deformity and fixation of the spine may be used. 8. If the cord is crushed, no matter what treatment is adopted, of necessity there will be a high rate of mortality.

The Surgical Treatment of Intraspinal Tumors.

DR. RICHARD H. HARTE, Philadelphia, said that the science

of spinal localization is now so well developed that it usually is not difficult to determine with accuracy the location of an intraspinal growth. What is usually understood by the term tumor of the spinal cord is an extramedullary but intraspinal growth, like a sarcoma, a fibroma, or a myxoma, giving no evidence of its existence except by the symptoms of medullary pressure which it produces. There have been found records of 92 operations for spinal tumors, among which number 43 patients died, a total mortality of nearly 47 per cent. The nature of the tumor is recorded in 88 of the reported cases. It was sarcomatous in two-fifths of the whole number (37 cases); adhesions, thickenings, etc., hold second place, with 11 cases; then come echinococcus, 8 cases; fibroma, 6 cases; syringomyelia, 5 cases; endothelioma, 4 cases; psammona, 3 cases; cyst, 3 cases; fibromyxoma, 2 cases; osteoma, 2 cases, and one each of myeloma, lipoma, lymphangioma, dermoid cyst, primary and secondary cancer, and one tumor of bone whose nature was not stated. Dr. Harte reported an interesting case of paraplegia from Pott's disease, in which he resorted to laminectomy, with great improvement. With very few exceptions, he said, it is impossible to determine the nature of the tumor before operation. He reported a case of dermoid cyst of the spinal canal in which he operated; the operation was followed by recovery. The patient was a girl, 7 years of age. Of 82 cases in which the region of the spine affected is given, the upper dorsal region was involved in 33 cases, or over 40 per cent. The tumor was found in the lower dorsal region in 24 cases, in the lumbosacral region in 14, and in the cervical region in 11 cases. The cause of death is given in 28 cases. One-half of these were due to shock and hemorrhage, or to infection and meningitis, there being 7 fatal cases under each of these categories. Eight patients died from exhaustion, 3 from recurrence of malignant growths, 2 from hypostatic pneumonia, and 1 from bedsores and sepsis. The technic of the operation is essentially the same as that used in traumatic cases.

Tubercular Conditions of the Spine Requiring Surgical and Mechanical Relief.

DR. DEFOREST WILLARD, Philadelphia, stated that the principal surgical measures employed for the relief of spinal caries are laminectomy for paraplegia; forcible immediate straightening of the kyphosis; forcible gradual straightening; erasion of carious bone; wiring of spinal processes; evacuation of pus accumulations; long continued fixation of the column, and hygienic measures to prevent the necessity for operative interference. Complete, methodical and long-continued fixation of the spine with hyperextension and with helpful surroundings in the sunlight are the prime factors in securing new bone deposit necessary to replace the carious bone. Laminectomy for paraplegia is advisable only after long-continued and patient treatment along these lines for from one to two years, since the prognosis, especially in children, under these conditions is favorable and good powers of locomotion may be confidently expected. The operation is justifiable in selected cases in which loss of motion and sensation are progressively worse and the symptoms threaten life. If the tuberculous masses within the spine can be removed, and if extradural pachymeningitic deposits or pus can be evacuated, improvement may be expected, and in many cases relief occurs. The operation has a mortality of about 25 per cent. from immediate shock; 36 per cent. within a month, while one-half the patients die within the next year, their lives being probably shortened by the operations; cases in which there is no improvement and death equal nearly 65 per cent. Forcible immediate straightening of the kyphosis is an unsurgical and dangerous proceeding, in that it is liable to reawaken the tubercular disease and to weaken the column. Forcible gradual straightening by supporting the kyphotic area on a pedestal is a valuable agent in relieving deformity. Complete erasion of the carious bodies of the vertebræ is an uncertain operation, in the dorsal region requiring section of ribs, with danger of wounding the pleura. Wiring of the spinous processes has not been tried sufficiently to demonstrate its helpfulness. Spinal abscesses, which contain only liquefaction of caseation should be aspirated. When true pus forms, aseptic through drainage is advisable.

Tumors of the Spinal Cord.

DR. J. COLLINS WARREN, Boston, read a paper in which he reported three cases of tumor of the spinal cord operated on with good results.

Spina Bifida.

DR. JAMES E. MOORE, Minneapolis, presented an analysis of 385 cases treated by excision. A careful study of these reported cases illustrating the experience of many surgeons, justifies him, he says, in drawing the following conclusions: 1. Operation on children of very tender age is scarcely worth while, because it is accompanied by so large a mortality rate, and because it does not stop the progressing cases. 2. Patients 5 or more years old can be operated on safely. 3. Patients with large or rapidly growing tumors, with hydrocephalus and with paralysis or deformities of the extremities are not cured. Finally, all that it can be hoped to accomplish by operation for spina bifida is to relieve the patient of an unsightly and annoying tumor after he has survived the dangers of the affliction per se.

Exophthalmic Goiter Treated Surgically.

DR. THOMAS W. HUNTINGTON, San Francisco, said that during the past three years he has treated surgically 9 patients suffering from this disease. In each instance, partial ablation of one or both lobes of the thyroid was done, and one patient was subjected to three operations successively. Seven were females and 2 were males. Their ages ranged from 28 to 56, the average age being 42 years. In 5 patients, the development of symptoms of exophthalmic goiter was associated with pre-existing enlargement of the thyroid. Two of these cases were cystico-colloid. In 4, the development of characteristic symptoms was simultaneous with glandular hypertrophy. All these cases were colloid. In the 5 cases in which the exophthalmic condition developed secondarily pre-existing glandular hypertrophy was noted during a period of of 6, 10, 34, 35 and 13 years, respectively. In this series, exophthalmic symptoms were noted 1, 2, 3, 2, and 2 years prior to operation, the average being 1 4/5 years. The duration of symptoms in the primary or pure Basedow cases prior to operation was two years, three months, two months and one year, the average being seven and one-quarter months. In this series 8 patients survived the operation and are living. One patient died on the twelfth day. The 8 living patients were carefully watched and their status definitely recorded up to date. Dr. Huntington gave a detailed account of each case as it occurred. A wider experience in this particular field, he states, has increased his faith in the value of surgical interference in carefully selected cases, and in conclusion he repeated the statement he made in an earlier communication, namely, that the argument for early operation in malignant diseases applies here with equal force. Extirpation should be undertaken before destructive changes have occurred, before the function of important organs is seriously, perhaps permanently, injured, and the patient's vitality lowered by chronic thyroid intoxication.

A Review of Five Hundred Cases of Gastroenterostomy.

DR. WILLIAM J. MAYO, Rochester, Minn., gave a summary of all the operations performed by him and by Dr. Charles H. Mayo during fourteen years in which an incision was made in both intestine and stomach, and plastic union established to increase gastric drainage. The death rate includes every patient dying in the hospital without regard to the cause of death or to the length of time after operation. Of pyloroplasty, there are 21 cases with no deaths, and 7 reoperations. Pyloroplasty has only a small field of usefulness. Finney's gastroduodenostomy, 58 cases, 4 deaths, 2 deaths from other causes at a late date, 1 death in the first 46. Dr. Mayo says that there is a large field of usefulness for this operation in narrow stricture following the healing of ulcers, but it is less useful in unhealed ulcer. Of gastrojejunostomy, there are 421 cases; benign, 307, death rate 6 per cent.; last 140 cases, 4 deaths. Malignant, 114, death rate 18 per cent; in the last 40, including radical operations for cure of cancer 5 per cent.

Murphy button, 157 operations, 139 anterior, and 18 posterior. This is the operation of choice after pylorectomy and partial gastrectomy. McGraw ligature, 38 operations. This is the operation of choice by the anterior method in gastrojejunostomy for inoperable cancerous pyloric obstruction. There were 228 posterior suture operations. Robson's bone bobbin, 43 operations, with 4 deaths, and 4 secondary operations. Moynihan operation on 9 inch loop, 53 operations, with 3 deaths; 7 patients were reoperated on for chronic bile regurgitation within 15 months. Roux-Doyen operation, 48 cases, 2 deaths, 2 secondary operations. Operation of choice is the Moynihan-Peterson without a loop, made by suture within 3 inches of the origin of the jejunum and obliquely on the posterior wall of the stomach with the inferior margin at the greater curvature near the junction of the pyloric end with the body of the stomach. In the last 80 gastrojejunostomies for benign disease there was only 1 death.

A Simple Aseptic Surgical Technic.

DR. DUDLEY P. ALLEN, Cleveland, Ohio, related observations on a series of 377 bacteriologic examinations of the hands, made at the close of operation, and on the clinical results obtained in 3,500 cases. The bacteriologic investigations were conducted in five series. In Series A, the cleansing of the hands was with soap and water, scrub brush and nail cleaner. The hands were then sterilized in Harrington's solution. In operating the hands were encased in rubber gloves in which was sterile water. In each of 26 observations, cultures taken from the hands at the close of operation were negative. In Series B the washing of the hands was as in Series A. Twenty-four observations showed that cultures were negative in each case. In Series C the washing was as in Series A, with the addition of thorough subsequent washing in 70 per cent. alcohol. In 42 observations the *Staphylococcus pyogenes albus* was found in 8 cases, or in about 20 per cent. The conclusion reached is that alcohol is not efficient as a disinfectant and does not prevent the development of bacteria within the rubber gloves containing no germicide but simply sterile water. From these observations, it seems probable that if bacteria develop on the hands sterilized by alcohol, when in gloves containing simply sterile water, they will develop in the same manner on the hands prepared in the same way if encased in dry gloves with powder, as the hands become moist with perspiration. In Series D the hands were prepared as in Series C, and then washed in a solution of bichlorid of mercury, 1 to 5,000, and encased in rubber gloves containing the same solution. Sixty-four observations were made, all negative except one, in which the *Staphylococcus pyogenes albus* was found. In Series E, the hands were washed as in Series A, and then thoroughly washed with a solution of bichlorid of mercury, 1 to 5000, and encased in rubber gloves containing the same solutions. One hundred and two observations were made. The hay bacillus was found in one case. In Series F the hands were washed as in Series D, and then cleansed in a solution of bichlorid of mercury 1 to 3000, and encased in gloves containing the same solution. Seventy-five observations were made. The *Staphylococcus pyogenes albus* was found in a single case.

The clinical observations were made on a series of 967 laparotomies. Of these, 687 were clean, and 288 were septic before operation. There were 2,533 operations other than laparotomies. This gives a total of 2,139 clean operations. For the purpose of study the clean cases only were taken, since the question of asepsis can not be studied in cases septic before operation. Tables were presented by Dr. Allen showing the results obtained in all the various series of operations, as in hernia, varicocele, varicose veins, and laparotomies of all kinds, and in other miscellaneous operations. The results show from the whole series of 2,139 clean operations but two deaths from sepsis. Erysipelas developed but once. Stitch abscess occurred in 58 cases, or in about 2.25 per cent. The method of cleansing the hands finally adopted is to wash them thoroughly with soap and water, using the scrub brush for the palms of the hands, but only slightly on the backs of the hands, and never on the arms, the object being to avoid irritation of the integument. The nail cleaner is used only beneath the nails and not around the bases of the nails. The hands and arms are then washed in a solution of bichlorid of mercury, 1 to 5000, and encased in rubber gloves containing the same solution. Dr. Allen believes that the continued action of the solution of bichlorid of mercury in the gloves is a fundamental safeguard in preventing the development of bacteria within the gloves during operation. That this is true in practice is shown by the results obtained in the large number of cultures taken at the close of operation.

The conclusions reached from the various series of cultures and clinical cases are, Harrington's solution, although efficient, is undesirable, since it causes marked irritation of the hands and arms. The washing of the hands and arms should not be too violent, and the use of the scrub brush should be confined to the hands. The arms should be washed by rubbing with gauze or a towel. The use of the nail cleaner about the base of the nails is unnecessary. Alcohol is not adequate as a germicide when used on the hands. A solution of 1 to 5000 bichlorid of mercury, used after washing to disinfect the hands and arms, and then used in the rubber gloves, is thoroughly satisfactory in protecting against the development of bacteria within the gloves during operation. The rubber glove is a guaranty of safety, not only to the patient, but to the operator himself, when operating on infected wounds. A mask over the face is not necessary.

Suture of the Spinal Cord Following Complete Severance by Gunshot Injury.

DR. GEORGE R. FOWLER, Brooklyn, N. Y., reported the case of a man, aged 18, who was shot in the back from a 38-caliber revolver, at a distance of about 30 feet, somewhat from the right side. Shock was severe and paralysis of the lower extremities occurred at once. The bullet wound was one and one-fourth inches to the right of the median line and on a level between the tenth and eleventh dorsal spines. He was found to be paralyzed below the waist. Sensation was absent over all of both lower extremities and over the abdomen as high as one inch above the crests of the ilia, on the sides, and about half way between the symphysis and the umbilicus in front. The bowels moved involuntarily and irregularly, and without the volition or cognizance of the patient. There was considerable twitching of the muscles of both legs, especially the toes. He was operated on May 9, 1903; ether anesthesia. An incision was made, six inches long, over the spines of the vertebræ, the middle of the incision resting on the eleventh dorsal spine. The laminæ of the tenth, eleventh and twelfth vertebræ were removed by the chisel. The bullet was found lying transversely between the severed ends of the cord, concealed from view by a large blood clot, a very narrow, ragged and a contused strip of dura, scarcely more than 1/16 of an inch in width remained intact. The blood clot was carefully sponged away and the bullet removed. The ends of the cord were sutured with three fine chromicized catgut sutures, the dura being included in the sutures. No special difficulty was experienced in drawing together the ends of the cord and closing the defect, the latter representing in width the diameter of the 38-caliber bullet. The dura was further secured with a number of sutures of fine catgut and a drain consisting of a half dozen narrow strips of oiled silk protective introduced. The skin incision was sutured with silkworm gut. Twenty-six months after the injury, voluntary motion was practically lost in the affected area. The patient was able to stand when supporting himself by the hands resting on an apparatus, and to make some locomotion by swinging movements in a special frame on wheels. The bladder and rectum control was doubtful, the former acting automatically. The patient had the sensation that the bladder and rectum were about to empty themselves, and if the urinal or bedpan were brought to him promptly, soiling was prevented. The amount of urine passed in this manner probably averaged more than a pint in the twenty-four hours. The urine was sometimes voided during sleep. Sensation was practically abolished in the entire affected region, with the exception of an area about five inches in length extending down the outer side of the right thigh, in which some sensa-

tion was present. Tactile sensations were recognized, but were usually referred to a point two or three inches distant from the point touched. Marked rigidity and spasticity of both legs were present. Patellar reflex was exaggerated; the Achilles was reflex marked. Ankle clonus was present on one side and absent on the other. The reaction of degeneration was absent. Bedsores developed in the third month which extended to the muscles and were six months in healing. The skin showed but slight, if any, evidences of trophic disturbance.

Intussusception.

DR. MAURICE H. RICHARDSON, Boston, reported a case of intussusception in a boy aged 4. The operation showed an invagination of the small into the large intestine, so firm that reduction seemed impossible. The child's condition was so bad that an enterostomy was performed, in the hope that a cure would be effected by spontaneous sloughing of the invaginated gut, life meanwhile being maintained through the enterostomy. Unfortunately the child died at the end of 18 days; the immediate cause of death being a purulent bronchitis. At the autopsy, no trace of the intussusception could be found. A careful search through the literature shows no case of spontaneous reduction of an intussusception in which the chain of evidence is absolutely complete. In this case, the diagnosis made before operation, and demonstrated before the staff of the Massachusetts General Hospital and a large audience, is unassailable. The lesson taught by this case would seem to be that greater efforts should be made for reduction, either by hydraulic or air pressure through the rectum or by manipulations after the abdomen has been opened. In Dr. Richardson's experience, however, the results have been fatally compromised by just such efforts. It seems questionable, therefore, whether in view of the great rarity of spontaneous reduction and of the almost universal failure of the milder palliative measures, one will ever be justified in selecting any but those operative measures which, undertaken at the earliest possible moment, can not fail to remedy completely and effectively the disease.

Constriction of the Duodenum Below the Entrance of the Common Duct and Its Relation to Disease.

DR. A. J. OSCHNER, Chicago, reported a series of cases in which operation was performed for the relief of cholecystitis, and in which there is frequently present a constricted condition of the duodenum just below the entrance of the common duct. This was usually accompanied with dilatation of the duodenum above this point. The dissection of a number of cadavers demonstrates a marked increase in the circular muscular fibers of the duodenum beginning at a point from 1 to 3 cm. below the entrance of the common duct, and extending for a distance of 1 to 4 cm., forming a broad sphincter. It seems likely that this sphincter has much to do with the physiologic function of the duodenum, facilitating the mixing of chyme with bile. It also seems likely that this sphincter serves the purpose of establishing a condition of rest in this portion of the alimentary canal in case of irritation of the biliary or pancreatic ducts. Dr. Ochsner gives a tabulated list of 14 cases of dilatation of the duodenum which he has met with among patients operated on for the relief of gall-bladder disease.

Perforation of the Gall Bladder.

DR. ARCHIBALD MACLAREN, St. Paul, Minn., reported ten cases of this condition, and said that gall bladder perforations are comparatively rare, especially if observations are confined to ruptures due to violence, ulceration and gangrenous inflammations. If we add to these the cases of cholecystitis in which inflammatory products have evidently escaped from, or passed through, the wall of an inflamed gall bladder, even though we may not find the perforation itself, the number of cases is considerably increased. Such abscesses about the gall bladder, either in the free peritoneal cavity or in the neighboring liver tissues are rare as compared with appendiceal abscesses; but are not uncommon and unquestionably should be included when studying perforations of that organ. Fistulous passages between the gall bladder and duodenum, stomach, or colon, are, of course, due to perforation of the gall bladder. Most perforations of the gall bladder occur in neglected cases in which gallstones have been known to exist for long periods of time and in which the patient has had ample warning through many attacks of biliary colic. Dr. MacLaren has operated in 80 gallstone cases, 9 of which were perforative in character. There were 8 recoveries and 1 death. In this fatal case, he believes that the result would have been the same even though the gall bladder had been removed, because with gangrene of the gall bladder and neighboring liver tissue, and especially in the presence of a localized abscess, any operative work which disturbs this abscess wall will only spread the infection and lessen the chance of recovery. He believes that in any perforative case which goes on to the formation of a localized abscess, the wisest course is to open and drain the abscess, waiting until a later time to deal with the gallstones or the disease of the gall bladder.

Resection of Portions of Chest Wall.

DR. EMMET RIXFORD, San Francisco, read a paper in which he discussed the subject of excision of portions of the chest wall for malignant tumors and reported cases in which he had operated.

MINNESOTA STATE MEDICAL SOCIETY.

Annual Meeting, held in St. Paul, May 31-June 1, 1905.

The President, DR. JOHN W. BELL, Minneapolis, in the Chair.

Oppose Cheap Work.

A resolution was adopted at the opening session providing that any member who should bid for fraternal insurance or club work at prices lower than the regular fee table would be liable to loss of membership, and that any branch society permitting such procedures would be liable to lose its charter.

Equal Admission Requirements.

The committee having in charge the standard of admission to the medical department of the state university protested against the lower standard for admission to the homeopathic department now obtaining, and recommended that the standard for admission to the regular school ought to be raised and the requirements for the homeopathic school raised to the same standard. This recommendation was adopted by the House of Delegates.

Reports of Officers.

The report of the treasurer showed a balance on hand of $2,810, and the secretary reported a total membership of 984, an increase of 98 for the year.

The recommendation of the council that no county society be given a charter until it has five members was adopted.

Addresses.

In his presidential address Dr. John W. Bell reviewed the work of the society during the year.

DR. WILLIAM L. RODMAN, Philadelphia, gave an exposition of the progress of surgery.

Tuberculosis Symposium.

Following the oration in surgery the tuberculosis problem was discussed from various viewpoints. Dr. Henry M. Bracken, St. Paul, discussed the care of tuberculous patients and stated that most of these cases, if taken in time, could be cured by sanatorium care. Dr. H. Longstreet Taylor, St. Paul, spoke especially of sanatorium treatment, and Dr. George D. Head, Minneapolis, of the dispensary treatment of tuberculosis.

Criticise State Examining Board.

DR. ARTHUR SWEENEY, St. Paul, presented a paper entitled "The State Board of Medical Examiners; a Criticism," in which he declared that the board had become useless through inactivity. It had carefully examined its applicants, but had utterly failed to prosecute medical irregulars and frauds.

DR. BURNSIDE FOSTER, St. Paul, said that county attorneys should be urged by the state board to prosecute such cases, but that this had not been done.

DR. OLE E. LINGER, Minneapolis, claimed that the board had secured only one conviction since it was organized.

DR. HALDOR SNEVE, St. Paul, considered the board as at present constituted a useless body and said that it should be abolished.

State Journal Proposed.

The president recommended the publication of a monthly medical journal as the official organ of the society. On motion this matter was referred to a committee to report next year.

Election of Officers.

The following officers were elected: President, Dr. Charles H. Mayo, Rochester; vice-presidents, Drs. David N. Jones, Gaylord; Theodore Bratrud, Warren, and Samuel H. Boyer, Duluth; secretary, Dr. Thomas McDavitt, St. Paul; treasurer, Dr. Richard J. Hill, Minneapolis, and delegates to the American Medical Association, Drs. William A. Hall, Minneapolis; Harper M. Workman, Tracy, and John T. Rogers, St. Paul.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Saline Injections and Rectal Feeding in Gastric Ulcer.

The treatment of acute gastric ulcer, according to F. D. Boyd in an abstract in *Med. Review of Reviews*, is rest for the stomach. An adult resting requires on an average 2,000 calories per diem to maintain the proper balance of nutrition, and it has been found that rectal absorption ranges from 300 to 500 calories daily. Rectal alimentation, therefore, means partial starvation and, in addition, it causes an increase in intestinal putrefaction. It is the common belief that substances injected into the large intestine reach only to the ileocecal valve, but, according to this author, particles under favorable conditions may reach the stomach. In this connection he quotes the experiments of Gützner, that if starch emulsion be injected into the rectum with a normal saline solution, the starch can be washed out of the stomach in from four to six hours afterward. This occurs partly through recurrent peristalsis or, more probably, by the action of the surface epithelium of the intestine. It is probable, therefore, according to this author, that rectal feeding may interfere with gastric rest, as considerable pain and vomiting frequently follow nutrient enemata. He recommends, therefore, in the beginning a mild aperient. No food should be given by the mouth during the period of physiologic rest of the stomach. Every six hours one pint of warm normal saline solution is syphoned into the bowel by means of a soft catheter and a filter funnel. This relieves thirst. If irritability be present, a small amount of morphin may be introduced into the rectum.

No fluid should be taken by the mouth. Water is not absorbed by the stomach to any great extent, and must be passed into the intestine, and thus sets up peristalsis, consequently it must not be given, especially if gastric hemorrhage be present. The mouth and teeth must be properly cared for, as salivation and irritating secretions from the mouth are swallowed and gastric irritation is set up. In simple ulcer complete rest for from twenty-four to forty-eight hours will cause all pain and gastric hyperesthesia to pass away. If these symptoms continue under this treatment for three days it means that the healing process is not going on and that adhesions are probably present. The period of complete rest should continue for from four to six days, and after this milk in small quantities may be given. It is unnecessary to peptonize the milk, but it should be diluted with water, with the addition to a small amount of sodium bicarbonate or phosphate.

At the end of the second week the patient may take sufficient milk to maintain the nutritive balance and the diet may be gradually increased till at the end of four weeks the patient may be placed on a convalescent diet without discomfort.

The treatment of gastric hemorrhage is the same as that of acute ulcer. Severe or repeated hemorrhages may require more active treatment. Of the medicinal preparations recommended to check hemorrhage, Boyd recommends morphin hypodermically and adrenalin by the mouth. He recommends lavage in cases of hemorrhage, against the usual opinions, stating that its benefit more than counterbalances its dangers. The presence of coagulated blood in the stomach causes vomiting and increased peristalsis which is more likely to disturb clot formation than lavage when carefully carried out. He, therefore, recommends lavage, using water at a temperature of from 104 to 105 F. Iced water is not recommended, as it tends to induce shock.

F. P. Henry, in *Amer. Med.*, recommends rest, both general and local, in the treatment of gastric ulcer. He states that this may be carried out by putting the patient to bed and nourishing him by rectal enemata. He recommends Ewald's mixture for rectal feeding: Two or three eggs beaten up with a tablespoonful of cold water. A small quantity of starch is then boiled with half a cupful of a 20 per cent. solution of grape sugar to which is added a wineglassful of red Rhine wine; the egg mixture is then slowly added, taking care that the fluid is not hot enough to coagulate the eggs. Eight ounces is sufficient at one feeding, preceded by a simple saline enema. These nutrient enemata should be continued for three days, followed by small amounts of food, consisting of milk or gruel, by the mouth. When milk disagrees with the patient, buttermilk or boiled or peptonized milk is recommended, gradually increasing the diet to raw or soft boiled eggs, beef, mutton and chicken broths.

The medical treatment, according to this author, is of secondary importance. Bismuth subnitrate is recommended in half-dram doses three times daily, suspended in barley water or mucilage. Severe pain demands morphine. Vomiting may be checked by morphin or cocain. Hematemesis may be checked by hypodermic injection of ergot or adrenalin. Gallic acid and lead acetate are also of value. Some form of anemia frequently accompanies gastric ulcer. The blood should be improved by some bland form of iron after the acute symptoms have subsided. For this purpose Ewald recommends a 2 to 3 per cent. solution of the sesquichlorid of iron, taking one teaspoonful thrice daily in a wineglassful of egg water, making a solution of albumin by adding one part of egg albumin to two parts of water.

Some authorities recommend a combination similar to the following in cases of gastric hemorrhage:

℞ Acidi tannici.....gr. xxx | 2
Glycerini.....m. xxx | 2
Aquæ dest. q. s. ad.....℥i | 30

M. Sig.: To be taken at one dose. Or:

℞ Bismuthi carb.....gr. xii | 75
Pulv. tragacanthæ.....gr. v | 30
Acidi hydrocyanici dil.....m. v | 30
Liq. morph. hydrochlor (1 per cent.).m. x | 65
Aquæ chloroformi q. s. ad.....℥ss | 15

M. Sig.: At one dose and repeat three times a day.

Hyperchlorhydria not infrequently precedes ulcer formation. To counteract this condition bismuth subnitrate is recommended in large doses after meals, put up in wafers or suspended in mucilage.

The following combination is of value:

℞ Sodii bicarb.....gr. viii-xv | 50-1
Magnesiæ calc.....gr. x | 65
Bismuthi subnit.....gr. xx | 1 30
Cretæ preparatæ.....gr. iv | 25

M. Ft. chart. No. i. Sig.: One such powder after each meal.

Constipation may occur with the administration of the foregoing, and under such circumstances a saline laxative is indicated.

Tabes Dorsalis.

The general and symptomatic treatment of tabes dorsalis, according to *Med. News*, consists in: 1. Avoid carefully all physical and mental exertion as well as alcoholic and sexual

excess. 2. Every day on arising administer friction along the vertebral column by means of a horsehair glove.

The following should be taken every other day before meals:

℞. Pulv. capsici.....gr. ii | 12
Pulv. ergotæ.....gr. v | 30
Pulv. glycyrrhizæ.....gr. x | 65
Mellis q. s. |

M. Ft. pil. No. xxx. Sig.: One pill before each meal and repeat every second day.

During the alternate days the following is recommended:

℞. Potass. iod' .....gr. xx 1 | 30
Aquæ .....℥iv 15 |

M. Sig.: One to two teaspoonfuls after each meal, in a glass of milk.

If the cause of the trouble is specific, mercurial inunctions are indicated.

If the pains are very severe the following combination is recommended:

℞. Morph. hydrochlor.....gr. x | 65
Cocainæ hydrochlor.....gr. v | 30
Aquæ dest. .....℥i 30 |

M. Sig.: Fifteen drops to be injected hypodermically to relieve the pains.

To counteract the urinary and ocular affections one or two pills a day of the following combination is recommended:

℞. Ext. belladonnæ.....gr. iii | 20
Ext. gentianæ.....gr. v | 30
Pulv. glycerhizæ.....gr. x | 65
Mellis q. s. |

M. Ft. pil. No. xx. Sig.: One or two pills daily.

The bowels must be kept active with glycerin enemata, or one of the following pills may be substituted:

℞. Podophyllin .....gr. ii | 12
Ext. cascaræ sagradæ.....gr. x | 65
Mellis q. s. |

M. Ft. pil. No. x. Sig.: One pill at bedtime for bowels.

Acute Anterior Urethritis of Gonorrheal Origin.

The following outline of treatment to be followed in cases of acute anterior urethritis of gonorrheal origin is recommended by E. G. Ballenger in *Southern Medicine and Surgery:* For the successful outcome of the treatment a well-regulated method of living is of the greatest importance. The patient should avoid all sexual excitement, alcohol, coffee, highly seasoned food, condiments, gravies, excessive use of tobacco and any violent exercise. The diet should consist of milk, buttermilk and other light, easily digestible substances that do not overload the urine. Large quantities of plain or lithia water, or lemonade, are of value, and the bowels should be regulated by mild laxatives or aperient mineral waters.

It should be kept in mind that the great feature of gonococci is to linger and to recur.

Internal medication is of great value. The author recommends balsam of copaiba and oil of sandalwood as of great benefit when given in doses of five minims (.30) each, three or four times daily, if no stomach disturbances arise.

In using urethral injections of the silver preparations the patient should be instructed to pass urine before the injection. The sides of the meatus are so pressed as to retain the fluid after the syringe has been removed. The fluid should be retained for five or ten minutes after each injection. The injections should be repeated once in three hours during the first three days, and gradually reduced to three a day and continued until the quantity of pus is very small. A saturated watery solution of hydrastin muriate should then be substituted for the silver and continued for from ten days to two weeks. If shreds and discharge are still present at the end of two or three weeks a more astringent preparation may be given, but always avoiding one that burns.

For this stage of the disease the author recommends the following combination:

℞. Acidi carbol.....gtt. vi | 30
Cupri sulph.....gr. x-xv | 65-1
Plumbi acetatis.....gr. x | 65
Aquæ dest q. s. ad.....℥viii 240 |

M. Sig.: To be used as an injection.

If a burning sensation appears the injection should be diluted. The meatus should be anointed with vaselin during the acute stage to prevent its being glued together or to stick to the protecting cotton and thus create a damming back of the discharge in the urethra. The patient should be urged to attend to proper hygiene, diet and medication until the shreds disappear from the urine.

Medicolegal

Privilege Not Severable.—The First Appellate Division of the Supreme Court of New York says that in the personal injury case of Powers vs. Metropolitan Street Railway Company the plaintiff called as a witness, for the purpose of proving the extent and nature of his injuries, the surgeon at the hospital to which he had been taken, who examined and treated him at that time. After the surgeon had been sworn, and before his direct examination was begun, the plaintiff's counsel stated that he called the witness for a special purpose, and asked that the cross-examination be limited to that purpose; but he did not state what that purpose was. The witness, in response to questions, then testified that he had charge of the plaintiff while in the hospital, and, on being handed a card, he stated that the memorandum on it was in his handwriting, was made at the time the plaintiff was in the hospital, and that it expressed his opinion at that time of the plaintiff's case; that it was a diagnosis of the case, and that, without reference to it, he could not, from memory, state the plaintiff's condition at the time. After examining the card, apparently for the purpose only of refreshing his memory, he testified that the plaintiff had phlebitis, contusion and thrombosis of the saphenous veins, explaining the meaning of those terms. On cross-examination he testified to being connected with the Vanderbilt Clinic, where he had seen the plaintiff, examined and treated him. He was not allowed to testify as to plaintiff's condition while attending the Vanderbilt Clinic, the testimony being excluded as not proper on cross-examination. Afterward he was called as a witness for defendant; his testimony was then excluded as privileged, which the court holds was error.

By calling out the testimony which the plaintiff did from the physician as to his condition immediately after the accident for the purpose of showing the nature and extent of his injuries, the court says that the plaintiff waived the privilege granted him under Section 834 of the Code of Civil Procedure, and authorized the physician to disclose all the information acquired while in attendance on him professionally. Having once waived his privilege, and introduced the physician's testimony as to his injuries, the plaintiff could not again claim the benefit of the privilege for the purpose of excluding other testimony by the same physician as to the development and progress of the same injuries at a subsequent date. Having opened the door to let in the testimony of his physician as to the injuries at one time, he could not again close it so as to exclude the testimony of the same physician which related to the progress and development of those injuries.

It appeared that this physician, at the time of the trial, was in attendance as an expert for the defendant, and, the court says, the plaintiff doubtless feared that his opinion might be biased by that fact, and his testimony might, therefore, be prejudicial to the plaintiff's cause of action; but, while that fact might have a bearing on the weight to be given to the testimony, it was not a ground for excluding it. The plaintiff saw fit to rely on the physician to testify as to the examination made immediately after the accident and the condition then existing. Having done this, he could not close the physician's lips as to a condition existing subsequent thereto, when the condition, according to his own claim, resulted from those injuries. The plaintiff could not sever his privilege so as to waive it in part and retain it in part. Having once waived it on the trial, it then ceased to exist, either partially or entirely, at least so far as that trial was concerned.

Right to Be Paid for Attending Inquest.—Section 515 of the Iowa Code provides that the coroner "shall hold an inquest on the dead bodies of such persons only as are supposed to have died by unlawful means," etc. By virtue of Section 529, when he deems it requisite, "he may summon one or more

physicians or surgeons to make a scientific examination, who shall receive a reasonable compensation to be allowed by the board of supervisors." In the case of Finarty vs. Marion County, which was brought by a physician to recover for services rendered in making such an examination on the summons of the coroner, the defense was made that the inquest was not lawful "for the reason that not the slightest suspicion or supposition existed that the deceased person had come to his death by unlawful means." But the Supreme Court of Iowa affirms a judgment in favor of the physician. It says that from the simple reading of the provisions quoted it seems clear enough that the supposition on which jurisdiction to act is made to rest must be one which arises—and, for that matter, exclusively so—in the mind of the coroner. He certainly could not justify himself for acting in any given case if the facts presented to him were such as that his own mind rejected the supposition that death had been caused by unlawful means. However, the allegation of the county amounted to nothing more than an assertion that the county, from the information gathered from it, had reached the conclusion that there was no room to suppose or to suspect that death had resulted from unlawful means. The allegation, then, was of a conclusion; not only that, but it must be apparent that the subject-matter thereof was wholly immaterial. A second sufficient answer to the county's contention was that the coroner was acting within the forms of law and in the apparent exercise of his lawful jurisdiction. In such cases it is not for a witness, whether he be subpenaed or summoned, to stand on the order of his going until a satisfactory showing is made to him that jurisdiction in the tribunal which demands his attendance is so far perfect as that he may be certain of his compensation in case he obeys. It is for him to answer, and, in cases where it is provided by statute, it is for the county, on proper demand, to pay.

Insurance Liability After Diabetes and Death After Injury to Thumb.—The Supreme Court of Minnesota says, in White vs. Standard Life and Accident Insurance Co., that an accident insurance policy provided that the company should be liable for injuries or death caused solely by accidental means, and expressly exempted it from liability if death resulted, wholly or in part, directly or indirectly, from any bodily disease or infirmity of the insured. The evidence in the case showed that, at the time the policy was issued, and at the time of the insured's death, which was claimed to have been the proximate result of an accidental injury to one of his thumbs, he was affected with diabetes, and the evidence was conclusive that such disease directly co-operated with the injury in causing death. The court holds that the company was not liable under the policy. It says that similar policies have been before both the state and federal courts, and the consensus of judicial opinion is that, subject to the exceptions contained in the policy, if the injury be the proximate cause of death, the company is liable, but, if an injury and an existing bodily disease or infirmity concur and co-operate to that end, no liability exists. If, however, the injury be the cause of the infirmity or disease—if the disease results and springs from the injury—the company is liable, though both co-operate in causing death. The distinction made in this particular is found in that class of cases where the infirmity or disease existed in the insured at the time of the injury, and, on the other hand, that class of cases where the disease was caused and brought about by the injury. And even in cases where the insured is afflicted at the time of the accident with bodily disease, if the accidental injury be of such a nature as to cause death, solely and independently of the disease, liability exists. The rule of proximate cause, as applied to actions of negligence, can not be applied in its full scope to contracts of this nature. But for the express reservation contained in this policy, the injury complained of in this case would, applying the ordinary rule of proximate cause, very properly be held the direct cause of the insured's death, but the fact that he was afflicted with diabetes at the time, which was aggravated by the injury and contributed to his death, removed the case from that rule and brought it within the exceptions of the policy. Nor was the rule in any way affected or changed by the fact that the company was informed, at the time the policy was issued, of the existence of the bodily infirmity. In such case the insurer contracts to indemnify the insured from accidental injury, knowing the existence of his bodily infirmity, but with the reservation and exception that the insurer will not be liable if such infirmity, directly or indirectly, co-operate with an accidental injury in causing death.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

July 15.

1 *Gall Spider Cases. R. T. Morris, New York.
2 Blood Pressure Observations for the Practicing Physician. C. E. Brush, Baltimore.
3 *Fractures and Dislocations of the Ulna. J. S. Wight, Brooklyn, N. Y.
4 *Cholemia in Neurasthenia. R. Hichardson, Baltimore.
5 *Recent Views Regarding the Treatment of Nephritis. J. S. McLester, Birmingham, Ala.

1. **"Gall Spider Cases."**—Morris says webs of peritoneal adhesion are found in the bile-tract region so commonly that they have come to be looked on almost as a normal characteristic of the region by postmortem examiners. The significance of these webs of adhesion has been overlooked in the same way that we overlooked the significance of adhesions in the cecal region previous to our knowledge of appendicitis. Peritoneal adhesions in the bile-tract region cause symptoms that are commonly diagnosticated as belonging to a large group of gastrointestinal disorders, and Morris believes that the subject is one that is to attract the widespread attention of physicians immediately. Rules are given for making the diagnosis in "gall spider cases," as he characterizes them. He removes the gall bladder and prevents recurrence of adhesion by the employment of Cargile membrane.

3. **Fractures and Dislocations of the Ulna.**—Wight treats this subject in a systematic manner. There are (1) fracture of the styloid process, (2) fracture of the shaft of the ulna, (3) fracture of the olecranon, (4) fracture of the coronoid process. The dynamic relations are fully treated and the mechanism of the injuries explained in detail. The results are explained in the clinical reports illustrating the different fractures. Wight gives a basis from which to determine the nature of an old fracture to the ulna. The patient suffers pain in the joint; this is sometimes severe. The power of flexion is generally lost, although in some instances there is good command over the motions of the forearm, mostly for the reason that some of the fibers of the tendon of the triceps remain attached to the upper end of the lower fragment. The patient has a sense of insecurity in his injured limb, which may be best explained by saying that the coördinate action of the elbow joint has been impaired or lost. This impairment is different in different persons. It would appear as if the coördinate circle of the joint function had been more or less broken into; this circle is made up of bone, nerve and muscle. Therefore, there should be no difficulty in understanding the disability which follows the break in the correlated bone. It would seem to be nearly impossible for the ulna to be dislocated by the application of violence to its lower end, unless we take into account those cases in which there has been a fracture of the external condyle; in such a case the ulna is dislocated backward, and is accompanied by the head of the radius and the broken off external condyle.

4. **Cholemia in Neurasthenia.**—Richardson reviews the etiology and symptomatology of cholemia, calling attention to the nervous symptoms with which it is associated. The presence of bile pigment in the plasma and the cerebrospinal fluid in certain cases of neurasthenia is the primary cause of the disease. He recommends mercury in small doses in combination with sodium glycocholate mass, with the administration of large quantities of water containing the inorganic salts of the plasma in normal proportion as well as alkalies in full doses. He considers that this form of neurasthenia has a bad prognosis, the disease often progressing to a true insanity.

5. **Recent Views Regarding the Treatment of Nephritis.**—McLester thinks that the practice of giving large quantities of fluids in cases of acute nephritis is still very general and, owing to the intolerance of the acutely inflamed kidney to water, is productive of much harm. As a diet in this disease he indorses a milk and cream mixture. In chronic interstitial nephritis he advocates moderate restriction of fluids to relieve as much as possible the heart, and thinks the diet usually prescribed is too low in proteids to maintain the necessary nutritive equilibrium.

Medical Record, New York.

July 15.

6 *American Medical Association: Its Origin, Progress and Purpose. L. S. McMurtry, Louisville, Ky.
7 *Delay of Old Age and the Alleviation of Senility. C. G. Stockton, Buffalo, N. Y.
8 *Congenital Absence of Tibia: Transplantation of the Head of Fibula: Arthrodesis at Ankle Joint. T. H. Myers, New York.
9 Examination of Rectum and Its Value in Diagnosis. C. J. Drueck, Chicago.

6.—THE JOURNAL, July 15, 1905, page 145.

7.—Id., page 165.

8. **Congenital Absence of Tibia. Transplantation of Fibula. Arthrodesis at the Ankle Joint.**—Myers' patient was a boy of 2 years, who was perfectly developed except in the right lower extremity, from which the tibia was entirely absent. The femur was normal in shape, but slightly atrophied, and the head of the fibula articulated loosely with the upper and posterior part of the external condyle of the femur. The foot was in marked equinovarus. The leg was two and three-quarters inches shorter than the other, and, as it was useless for walking, the child had always gone about on his knees. As there was no reaction of degeneration among the leg muscles, it was thought that development would follow the use of the limb if this could be secured. The head of the fibula was accordingly freed from its attachments and brought into position between the condyles of the femur, where it was secured by suitable manipulation of the ligaments. The object of this operation was to lengthen the limb (about three-quarters of an inch was gained) to secure a stable support for the body weight, and to preserve the mobility of the joint. The ankle joint was then opened, the external malleolus cut off, and the fibula placed squarely on the astragalus and united to it by sutures. The object was to lengthen the limb, to correct the deformity, and to secure a stable position of the foot. Recovery was uneventful and now, ten months after operation, the boy can walk about all day with a splint, can flex his leg ninety degrees, and can almost fully extend it. Meyer reviews the etiology of the deformity and cites six other cases, which he says are all that have been treated by transplantation of the fibula. While in cases of this sort a splint and high shoe will probably always be required, still this is usually preferable to the alternative, which is amputation.

Medical News, New York.

July 15.

10 *American Medical Association: Its Origin, Progress and Purpose. L. S. McMurtry, Louisville, Ky.
11 *Delay of Old Age and the Alleviation of Senility. C. G. Stockton, Buffalo, N. Y.
12 *Influence which the Acquisition of Tropical Territory by the United States Has Had, and is Likely to Have, on American Medicine. G. Blumer, San Francisco, Cal.
13 *Treatment of Diarrhea in Children. J. E. Winters, New York.
14 Epilepsy, the Result of Gastrointestinal Disturbance. F. H. Murdoch, Pittsburg, Pa.
15 Three Additional Cases of Primary Sarcoma of the Stomach. H. Brooks, New York.

10.—THE JOURNAL, July 15, 1905, page 145.

11.—Id., page 165.

12.—Id., page 169.

13. **Treatment of Diarrhea in Children.**—Winters calls attention to the difference between diarrhea and dysentery and states that though they are two entirely distinct diseases, they may both exist in the same patient at the same time. He states that diarrhea is purely a food disorder and is, therefore, preventable. Prompt appropriate treatment arrests it at once, therefore, it should never be fatal. The first step in the treatment is the removal of the cause, and Winters believes it can best be accomplished by prompt administration of castor oil. After the detergent, cleansing, purifying action of the oil has ended, only water should be given for about twenty-four hours. In very severe cases from thirty-six to seventy-four hours must elapse before food is given. After this period of intestinal rest, food in a modified and weakened form of that which is physiologic for a well child of the same age, may be given. Winters gives explicit directions for modifying the food for children of various ages. He does not approve of the barley water and dextrinized cereal diet for young infants either in health or in disease.

Boston Medical and Surgical Journal.

July 13.

16 *American Medical Association: Its Origin, Progress and Purpose. L. S. McMurtry, Louisville, Ky.
17 *Delay of Old Age and the Alleviation of Senility. C. G. Stockton.
18 *Neurasthenia. A Study on Etiology. Treatment by Occupation. H. J. Hall, Marblehead, Mass.
19 Senile Albuminuria. A. E. Austin, Boston.
20 Recording of Rotation Deformity by Projecting Horizontal Points. H. O. Feiss, Cleveland, Ohio.
21 Anal Fissure. T. Hill, Boston.

16.—THE JOURNAL, July 15, page 145.

17.—Id., page 165.

18. **Neurasthenia.**—Hall states that although the term neurasthenia seems about to lose its identity in a better and more accurately descriptive nomenclature, still it is a very convenient expression, and one which will be readily understood to refer broadly to a wide range of functional mental and nervous deviations. The confirmed neurasthenic with his tangle of mental and nervous symptoms, presents an appalling problem to the conscientious physician. Hall believes that some of the confusion which clouds our understanding of neurasthenia and its treatment may arise from the fact that we look at the disease as a whole, and that such a view of any complicated body is bound to be misleading. An examination of the daily life of the average neurasthenic, he states will reveal, in most cases, the grossest maladjustments. The patient's whole personality is at war with its environment. It is evident that here is a condition which, if not relieved, can perpetuate indefinitely, some, at least, of the most important neurasthenic symptoms. We may be dealing with elaborate toxins of over and perverse functioning, with physical disease and suffering, with personal predisposition and with heredity, but we are also dealing with matters of everyday living, and we are deeply concerned with two things—the attitude of the patient toward his environment and also with that environment. If the necessity for prolonged physical rest can be eliminated, Hall believes that the ideal life for the neurasthenic is one of occupation. The life of the artisan recommends itself in the treatment of this condition because in itself it is simple and is without the complications of social, business or professional life and may be so complete and satisfying as to compel devotion. Hall believes that the neurasthenic who can drop the conditions of his old life to become a successful weaver or potter thereby simplifies life immeasurably. The kind of life chosen as most frequently applicable and least likely to foster neurasthenia is that of productive industry. The difficulties of transferring the patient to this, for him, ideal environment are not so great as might at first be supposed.

New York Medical Journal.

July 15.

22 Diagnosis and Treatment of Gastric Ulcer. C. H. Nammack, New York.
23 Safety X-ray Tube. H. G. Piffard, New York.
24 Report of Operations Performed at the Public Clinics for Students at the German Hospital During the Session of 1904 and 1905. J. B. Deaver, Philadelphia.
25 Popliteal Aneurism. Surgical Treatment. H. M. Taylor, Richmond, Va.
26 Bronchoscopy for Removal of Foreign Bodies from the Lungs. E. F. Ingals, Chicago.
27 Case of Papilloma of Kidney with Nephrectomy. J. B. Boucher, Hartford, Conn.
28 Six Lectures on the Disease of the Blood. J. M. Swan, Philadelphia.
29 *Treatment of Erysipelas of Face. P. W. Monroe, Springfield, Ill.

29. **Treatment of Erysipelas of the Face.**—Monroe says that in treating erysipelas an attempt should be made to shorten the course and to modify the severity of the disease. To

accomplish this the proliferation of the infecting organisms in the skin must be inhibited and the patient must be stimulated and supported in order to overcome and to eliminate the toxins. If a wound be the site of infection it should be carefully cleansed. The face should be washed with warm water and soap, and with alcohol, to remove all dirt, epithelial débris and oleaginous matter in order that the antiseptic applied may be more readily absorbed. The antiseptics are best applied in the form of cold wet dressings, and Monroe states that the best of these are solutions of aluminum acetate, bichlorid of mercury from 1 in 5,000 to 1 in 2,000, ichthyol 10 per cent., and carbolic acid. He believes that as there is undeniable evidence that carbolic acid is readily absorbed by the skin, it should be given the preference, but should be used with care. He applies it on gauze pads four or six layers in thickness, and remoistened about every hour. Over this he places a thin, light icebag, or better, an ice poultice, a mixture of finely crushed ice and sawdust in a bag of oiled silk. He regards the application of cold as a most important feature of the treatment, as the maintenance of a low temperature in the infected area is deterrent to the proliferation of the infecting organisms. Monroe states that erysipelas patients should be isolated and that the physician and nurse should wear rubber gloves when attending them. The patient should be kept in bed as long as the fever continues. In most cases calomel or salines are indicated in the beginning. In debilitated patients a milder cathartic or an enema is better. The diet should be fluid, its chief constituent being milk. When stimulants are necessary, alcohol and strychnin are best, in Monroe's opinion. The patient should be encouraged to drink water freely. When the temperature is high the patient should receive an alcohol sponge every four hours. As the inflammation subsides emolients and warm water will hasten resolution and desquamation. In those individuals in whom there are recurrent attacks, it is probable that in many the skin is never freed from bacteria, but that they remain quiescent in or about the hair follicles. In these cases, in addition to the general tonic treatment, local stimulation of the skin by alternate hot and cold ablutions and massage is of benefit. All abrasions and trivial wounds should be carefully cleansed and protected.

Lancet-Clinic, Cincinnati, Ohio.

July 8.

30 Conceptions of the Nature and the Management of Bright's Disease. A. C. Croftan, Chicago.
31 *Chloroform and Ether Anesthesia. C. T. Souther, Cincinnati.

July 15.

32 Tuberculosis as a Causative Factor in Sterility in the Male. G. E. Malsbary, Cincinnati.
33 Gonorrhea and Syphilis in the Causation of Male Sterility. M. L. Heidingsfeld, Cincinnati.
34 Derangements of the Nervous System Causing Male Sterility. H. H. Hoppe, Cincinnati.
35 Recognition of Important Eye Lesions by the General Practitioner. G. F. Suker, Akron, Ohio.

31. **Chloroform and Ether Anesthesia.**—Souther calls attention to the fact that often too little consideration is given to the qualifications of the anesthetist. He mentions the various appliances for the administration of chloroform and ether, and the difficulty encountered in most of them when using them for male patients who have beard and mustache, and also says that these appliances can not be used, as a rule, in excision of the jaw and in operations on the hard palate. He describes in detail the method of preparing a patient for an anesthetic, and the method of its administration. He states emphatically that the patient should not be told to take long, deep breaths, but should be encouraged to breathe easily and naturally. He also states that in the stage of excitement it is unwise to hold the patient down too forcibly. The patient should feel that he has met an inanimate object and not a human adversary to whom he can show fight. Souther calls attention to the various reflexes which should be watched and to the methods of resuscitation. He also mentioned briefly the treatment of patients after anesthetization.

St. Louis Medical Review.

July 1.

36 Onomatologia Gastrologica. A. Rose, New York.
37 Rupture of the Gall Bladder (Spontaneous and Traumatic; with and without operation). B. M. Ricketts, Cincinnati.
38 Hypnotism and Crime. C. L. Tuckey, London, England.

July 8.

39 *Inflammatory Conditions of the Appendix Accidentally Brought to Light in Pelvic Operations. H. Robb, Cleveland, Ohio.
40 Migratory Uterine Fibroids. R. Peterson, Ann Arbor, Mich.
41 Rupture of the Gall Bladder (Spontaneous and Traumatic, with and without operation). B. M. Ricketts, Cincinnati.

39. **Inflammatory Conditions of the Appendix.**—Robb states that in a long series of abdominal operations he has made it a routine procedure to examine the appendix, and if he finds it diseased, to remove it, the patient's condition permitting. In 1,000 abdominal sections for pelvic disorders Robb failed to find positive evidence that in a single case the appendix was the primary seat of disease. Of 370 appendices removed and examined microscopically, 103 were normal, 46 showed signs of a chronic and 1 of acute inflammation. In 88 cases there was a hypertrophy of the subperitoneal or internal coat, or of both coats. In 66 cases the changes were of doubtful significance. In 36 cases the lumen was occluded, in 16 dilated, in 12 the appendix contained concretions, in 1 case the appendix was cystic and had undergone myomatous degeneration, and in 1 case no lymphoid tissue was present.

Medical Fortnightly, St. Louis.

June 10.

42 Lupus Erythematosus — Lupus Vulgaris — Syphilis. J. V. Shoemaker, Philadelphia.
43 Deaf Mutes and the Instruction of the Deaf and Dumb. A. F. Koetter, St. Louis.
44 Relation of Man to Nature (A Study Prompted by "Testimonies of the Sepulchres"). A. S. Ashmead, New York.
45 Anatomic Eponyms. R. S. Gregg, Chicago.

Oklahoma Medical News-Journal.

June.

46 Medical Ethics and Common Sense. A. K. West, Oklahoma City.
47 New Lower Jaw Splint. I. B. Bartle, Carmen, Okla.

Cleveland Medical Journal.

June.

48 Anchylosing Arthritis of the Spine—Its Pathology, Recognition, and Treatment. H. O. Feiss.
49 Hyoscin Treatment of Drug and Liquor Habits. H. G. Wagner.
50 Waste of Time Incident to Defective Vision. L. K. Baker, Cleveland.
51 Microscope and Micro-Photography. F. D. Snyder, Ashtabula.

Journal of Mental Pathology, New York.

June 8.

52 Heredo-Syphilis. Form—Infantile Multiple Sclerosis. S. De Sanctis, and Dr. G. L. Lucangeli.
53 Clinical Observation on a Rare Case of Phobia. P. Timpano.

American Journal of Obstetrics, New York.

June.

54 Details Regarding the Operation of Cesarean Section in Cases of Contracted Pelvis, Based on a Series of Thirty Cases. J. M. M. Kerr
55 *Cesarean Section in Late Labor. R. W. Holmes, Chicago.
56 *Six Cases of Cesarean Section. J. B. De Lee, Chicago.
57 Study of Four Hundred Cases of Tuberculosis in Children. S. S. Adams, Washington, D. C.
58 Three Cases of Repair of Injury to the Ureter; Two by Transplantation into the Bladder, and One by End-to-End Suture. A. L. Smith.
59 Repeated Tubal Pregnancy. E. N. Lieli, Jacksonville, Fla.
60 History of the Obstetric Forceps. H. G. Partridge, Providence, R. I.
61 *Use and Abuse of the Uterine Curette. R. P. McReynolds, Philadelphia.
62 Paul Portal, His Life and Treatise on Obstetrics, with Reflections on the Science or the Obstetrical Art in France from the Renaissance to the Eighteenth Century. C. G. Cumston, Boston, Mass.

55. **Cesarean Section in Late Labor.**—Holmes believes that this procedure is not a justifiable one and that the appropriate time for abdominal hysterectomy is at term before labor has begun or not long after active contractions have been in progress. The contraindications to the Cesarean section in late labor center in the following facts: Prolonged labor lowers the woman's resistance to shock; conduces to atony of the uterus, therefore to hemorrhage, occasionally necessitating hysterectomy; it develops certain effete substances, which are eliminated more slowly than they are produced, and which lower immunity by a species of autointoxication. During protracted labor certain secretions are poured into the uterus and vagina which offer excellent culture media for the development of bacteria normally present in the parturient canal, or introduced by examinations. After the membranes are projected through the os externum, or the head has molded into the os, they are exposed to the contamination of the vagina;

in removing the secundines and the child through the uterine incision they may soil the peritoneum or wound. The prolonged labor frequently is the determining factor in the death of the child, or so jeopardizes its life that its prospects are curtailed. Holmes deprecates the Cesarean section performed with inadequate assistance, filthy surroundings and makeshift facilities. An emergency operation should not be done unless there be very pressing indications.

56. **Cesarean Section.**—De Lee is of the opinion that the results obtained in 10 cases of Cesarean section encourage one to extend the field of this operation. Of these 10 cases, 9 mothers recovered and 9 babies lived. One child died in sixteen hours under symptoms of acute sepsis, though the mother recovered. The one patient who died had been in labor three days, had been examined under ether three times, and had a solid tumor of the ovary blocking the pelvis completely. The technic of the operation varied but little in each case. The transverse fundal incision was used only twice. The uterus was amputated three times, once for obstruction to the lochial flow and twice because of a severe vaginitis. One ovary was left in each of these cases to preserve the ovarian function as long as possible. The uterus was delivered through the incision in all the cases, but the abdomen was closed in three layers and no hernia has developed in any of the cases.

61. **Use and Abuse of Uterine Curette.**—McReynolds' article is based on the study of 170 cases of curettement. He uses the sharp curette almost exclusively, but occasionally finds use for a large, dull curette. Endometritis hyperplastica chronica or polyposa, subinvolution of the uterus, and puerperal conditions of the endometrium caused by the retention of some of the products of conception, yield promptly, as a rule, through a thorough and careful curettement, unless there is already present disease of the adnexa or a general septic infection. McReynolds scarcely ever finds it necessary to leave a packing of gauze in the uterine cavity, and when he does so he invariably removes it within twelve hours. In malignant growths not permitting a radical operation, a careful curettement and the free use of the cautery, followed by chlorid of zinc, has yielded surprisingly good results in his hands; the pain, foul discharge and hemorrhage are relieved; life is rendered much more comfortable and is lengthened materially. In curettement for diagnostic purposes his results have not been entirely satisfactory. In septic conditions, when the infection has passed through the endometrium into the muscle of the uterus to the Fallopian tube or to the cellular tissue around the uterus, or has been carried by the lymph vessels through the ovaries or elsewhere over the body, no appreciable benefit comes from the curettement, except to establish the diagnosis and to prove that the uterine cavity is free from all decomposing and septic material. In endometritis accompanying the submucous fibroids he has failed to see a curettement do any permanent good. In gonorrheal endometritis he has obtained anything but satisfactory results from curetting the uterus and swabbing out the cavity with pure carbolic acid, tincture of iodin, etc. In chronic endometritis McReynolds advocates a radical operation from the start, having seen but one case benefited by curettement. In dysmenorrhea from pathologic collections, the result from a dilatation and curettement are good. Major operations on the adnexa should be preceded by curettement of the uterus, unless there is some contraindication.

Interstate Medical Journal, St. Louis.

June.

63 Actinomycosis. J. A. Matlack, Galesburg.
64 *Laryngeal Diphtheria. O. H. Wilson, Nashville, Tenn.
65 Movable Kidney, with a Report of Five Successful Nephrorrhaphies. E. E. Gelder, Peoria, Ill.

64. **Laryngeal Diphtheria.**—The objects of Wilson's paper is to emphasize the importance of early mechanical relief when mechanical obstruction threatens life. It is wrong to delay until the pressure is marked. Rapidity of progress is the characteristic feature of this form of diphtheria. Intubation is not a difficult procedure and can be learned easily by practice; yet in no other operation does skill show to better advantage. An early operation, though possibly awkward, is better than waiting to give a moribund patient to an imported consultant.

American Journal of Surgery, New York.

June.

66 *Appendicostomy. J. P. Tuttle, New York.
67 Remarks on Origin of Malignant Growths; with a Note on the Treatment of Malignant Ulcerations by Balsam of Peru. P. F. Eve, Nashville, Tenn.
68 Diagnosis and Reducibility of Inguinal Hernia. W. B. DeGarmo, New York.
69 Paraffin in Surgery, A Critical and Clinical Study (Continued). W. H. Luckett and F. I. Horn, New York.
70 Surgical Treatment of Gastric Ulcer. J. F. Erdmann, New York.
71 Keloid of Female Breast. E. Lanphear, St. Louis.
72 Submucous Resection of Deviated Nasal Septum. S. Yankauer, New York.

66. **Appendicostomy.**—The technic employed by Tuttle is as follows: The patient having been prepared as for the "interval operation," the abdomen is opened by the intermuscular method; an incision one and one-half inches long is sufficient in all uncomplicated cases. The appendix having been found and brought out over the skin, its artery is tied and the mesentery stripped down to its junction with the caput coli; a suture is then passed at the lower angle of the wound through the peritoneum, the muscular wall of the cecum at its juncture with the appendix and back through the peritoneum on the opposite side of the wound, a second suture is then passed about one-half inch above the other, through the same tissues but on the upper side of the appendix. These two sutures being tied, the peritoneum is closed by continuous suture and the wound is closed by through-and-through or layer sutures, as the operator prefers; finally, one suture is passed through the skin and the muscular wall of the appendix on either side of the wound. The appendix is then wrapped in protective tissue, the upper angle of the wound is sealed by protective tissue and chloroform, and a simple dry dressing is applied. In thirty-six hours the dressing is removed and the appendix is cut off, about one-fourth of an inch from the skin of the abdomen. It will usually be found more or less gangrenous at its tip on account of the main artery having been cut off. Some small dilating instrument is introduced through the caliber of the appendix into the cecum, and this followed by the introduction of a No. 10 to 12 soft rubber catheter. This should pass in about four inches; a little silk thread should then be thrown around the protruding portion of the appendix and tied firmly around the catheter in order to prevent any escape of feces or intestinal fluid along the sides of the tube. This also serves to cut off the stump of the appendix flush with the skin. The catheter should protrude from the skin about two inches and should be fastened with a safety pin in order to prevent its slipping in either direction. The operation can be done quickly, it affords ample access for irrigation and medication of the colon, and the disagreeable features of artificial anus are practically eliminated. The opening does not close spontaneously and yet it can be closed by cauterizing the mucous membrane when advisable. Irrigation may be begun any time after catheter is introduced.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.

June.

73 Treatment of Abdominal Injuries with Special Reference to Gunshot Wounds of the Liver. J. E. Summers, Jr., Nebraska N. G.
74 Hernia in the Italian Army. Col. P. Imbriaco., R. I. A.
75 Pulmonary Tuberculosis: Its Diagnosis and Course Under Favorable Climatic Conditions. E. D. Sinks, U. S. A., El Paso, Texas.
76 Fracture of the Head of the Radius. C. E. Banks, P. H. and M.-H. S.
77 United States Naval Hospital Ship Relief, with Some Notes on Hospital Ships. W. C. Braisted, U. S. N.
78 *Operation for the Radical Cure of Congenital Inguinal Hernia. A. C. Smith, P. H. and M.-H. S.
79 Extemporized Operating Room. M. A. Rebert, U. S. V.

78. **Radical Cure of Congenital Inguinal Hernia.**—Smith has devised an operation for the radical cure of congenital inguinal hernia which he employed in four cases (out of 63 hernias operated on in 60 patients). The method is as follows: After forming a tunic for the testes out of the lower end of the sac, the remainder of the sac, except the strip which lies immediately on the vas and its vessels and nerves, is trimmed away close to the abdominal cavity. The simple wound of the peritoneum which results is closed with a continuous suture, one extremity ending at the cord. The transversalis fascia is sutured either with the peritoneum or separately, and the operation is proceeded with according to the

Bassini method. The strip which is left attached to the cord consists of peritoneal membrane and does not interfere with the closure of the openings in the sac. There is no more difficulty in closing the peritoneal wound completely and securely than in any other situation.

Journal of Nervous and Mental Disease, New York.
June.

80 *Dementia Præcox. R. Sachs, New York.
81 Traumatic Cervical Hematomyelia and Complete Division of the Cord, with Probable Dislocation of Fifth Cervical Vertebra. C. S. Potts, Philadelphia.
82 Medical Treatment of Insanity. R. Jones, Claybury, England.

80. **Dementia Praecox.**—Especial stress is laid by Sachs on the following points: There are unquestionably many cases that correspond accurately to the types described by Kraepelin and his followers. This is particularly true of the earlier forms of mental derangement occurring in members of families in which there is a very marked psychic taint. Even in such individuals, however, many years pass before appreciable dementia sets in. The term should be carefully restricted to those cases in which mental deterioration at an early stage of the disease is clearly recognizable and should be carefully considered and if possible avoided in those cases in which a dementia may possibly be developed in the far distant future. Making the diagnosis of dementia praecox put the stamp of an incurable malady on individuals who may be sufficiently alert to be useful to themselves and to others for a long period of years, and in that sense does them a distinct injustice. There seems to be little gain in grouping widely different conditions under one heading simply because the individuals so afflicted are in the first third of life. The older plan of clinical subdivision is more commendable, and the tendency to dementia should be insisted on only when there is reason to think that a deterioration is certain to develop at a relatively early period.

Archives of Pediatrics, New York.
June.

83 *Etiology and Classification of the Summer Diarrheas in Infancy. C. H. Dunn, Boston.
84 *Fat in Its Relation to the Production and Cure of Infantile Marasmus. H. Stern, New York.
85 Albumin in the Urine of Apparently Healthy Children; Renal and Cardiovascular Changes in Children as Seen in Southern California. W. A. Edwards, Los Angeles.
86 *Etherization of Children. W. G. Elmer, Philadelphia.

83. **Summer Diarrheas in Infancy.**—Dunn states that the diarrheal diseases of infancy occurring in the summer months differ in no way, either clinically or anatomically, from the diarrheal diseases occurring in the cooler months, except in their much greater frequency. Classification on an anatomic basis, as for example into functional and organic, or non-inflammatory and ileocolitis is not convenient for etiologic study, owing to the variety of lesions found in cases of similar etiology and similar clinical course, and to the lack of correspondence between the anatomic and clinical pictures. The following clinical classification is suggested: (a) Acute nervous diarrhea, characterized by loose stools of normal color and odor, without abnormal constituents. (b) Irritative diarrhea. Acute intestinal indigestion of the irritative type, characterized by the absence of persistent fever, and by the presence of curds and undigested masses in the discharges. (c) Fermental diarrhea. Acute intestinal indigestion of the fermental type, characterized by the absence of fever, and by green stools of a foul or sour odor. (d) Infectious diarrhea, characterized by the existence and persistence of fever, and by the tendency toward early signs of ileocolitis, as shown by the presence of blood, and excess of mucus in the discharges. When a specific organism, the *Bacillus dysenteriæ*, is proved to be the cause, the case may be further particularized by the term infantile dysentery. (e) Rare cases occur, corresponding to the known description of heat exhaustion and cholera infantum. Of the above differentiated types, the indigestion, including the irritative and fermented cases, is by far the commonest. The chief or primary cause of all the above types is the increased heat of the weather occurring during the summer months, which probably acts in the noninfectious cases by producing functional disturbance either of the nervous system or of the digestion; and which acts in the infectious case by producing in the intestine conditions more favorable to the occurrence of infection. The name thermic diarrhea can be given to the entire group. Bacteria are the secondary cause of a certain number of cases, such cases being mainly, if not wholly, of the type classified clinically as infectious. Infection occurs by the introduction of bacteria from without, or by auto-infection with bacteria already in the intestine. The latter is probably the usual method. The *Bacillus dysenteriæ* is a cause of most of the infectious cases. Whether it is the sole cause remains to be determined. The *Bacillus dysenteriæ* can often be found in the intestine in cases in which it probably has no causal relation with the pathologic process. Such cases are usually clinically of the non-infectious type. Other organisms are probably a cause of some infectious cases. The anatomic changes of various kinds included under the term ileocolitis may occur in any of the above clinical types except the acute nervous. Anatomic changes of some kind probably occur in all infectious cases.

84. **Relation of Fat to Infantile Marasmus.**—The data which may be gleaned from Stern's paper are the following: The overwhelming majority of cases of infantile marasmus occur in artificially nourished children. The gastrointestinal disturbances underlying infantile atrophy are very often due to the character of the food and not infrequently to its fatty contents. While the quantity of fat ailment has found frequent practical consideration, the chemical character of the fatty substances entering into the baby's nutriment have hardly ever been inquired into by the clinician. The composition of the fat of cow's milk is greatly at variance with that of the fat of human milk, differing especially in its far greater contents of volatile fatty acids, among which butyric acid is the most important. Butyric acid is the mother substance of the acetone bodies to the presence of which a number of disorders to which the infant is prone have been ascribed by various observers. Butyric, caproic, caprylic and capric acids are contained in the fat of cow's milk in from six to eight times the amount in which they are present in that of human milk. The infantile organism can not cope successfully with the fat of cow's milk even in a mere physical sense. This is evidenced by the decidedly smaller absorption of the fat compound derived from cow's milk than from human milk. The occurrence in the feces of absolutely and relatively larger amounts of fat of cow's milk is *prima facie* evidence of its more incomplete utilization by the youthful organism. As the physical and chemical properties of the milk fat are dependent on the absolute and relative amount of lower and higher and uncombined fatty acids, it is evident that the vast discrepancy existing between the constitution of cow's milk fat and mother's milk fat can not be overcome by any possible modification of the former. Apart from the butyric acid origin of the acetone bodies we find that the volatile fatty acids as furnished by the fat of cow's milk are decided irritants of the delicate intestinal mucosa of the infant. The ingestion of these acids, therefore, is the primary cause of many instances of gastrointestinal irritation and disease followed by undernutrition and bodily retrogression. Alteration in the fat supply as exercised to-day is almost without exception a quantitative one, consisting of reduction, suspension and even increased supply of fat ailments. Withdrawal of milk fat in handfed infants frequently results in cessation of the local disturbance. It is obvious, however, that the infant can not exist for any length of time without fatty ingesta of some kind. Furthermore, the incipient marasmic condition can not be relieved unless a sufficient amount of assimilable fats yielding but insignificant amounts of volatile fatty acids is added to the nutriment. Yolk fat seems to be the ideal fat for infants suffering from chronic gastrointestinal disturbance together with latent or even pronounced athrepsia infantum. Yolks should not find employment in the newborn nor in the infant which thrives on the physiologic nutriment or on a modification of cow's milk. Yolks should be used only in those pathologic conditions which may lead to athrepsia infantum and in those which are due to or aggravated by the fat constituents of the nourishment. There are two essentials which must be followed for good results from the ingestion of yolks, viz., the yolk fat must completely replace the milk fat,

and the amount of yolk fat, without being in excess, must be adequate, that is, it must conform to the caloric and nutritive demands of the organism. The electrical conductivity of skimmed milk plus physiologic amounts of yolk fat is probably somewhat greater than that of native milk.

86. **Etherization of Children.**—According to Elmer, there are but few occasions in which ether may not be given to children in preference to other anesthetics. The most important of these is an abnormal state of the respiratory organs, as in acute bronchitis, pulmonary congestion or pneumonia. The preparation of children for the operation and anesthetic does not differ materially from that of adults. Solid food should be absolutely forbidden on the day of operation. If an operation is fixed for 11 o'clock in the morning, a cup of broth may be given at 7, unless there is some definite reason for not doing so, and water may be given at the same time. The fluids are promptly absorbed from the stomach, and four hours later the child should be in excellent condition for the anesthetic. The open method of administration is the one which should be adopted always. In order to lessen shock and to preserve bodily heat and energy the vital activity of the tissues should be kept up to its highest point, and for this purpose an abundance of oxygen is necessary. This can best be supplied by pure fresh air. The smaller size of Allis inhaler should be used. This should have a clean, folded towel pinned closely about it, and permitted to extend about an inch below the lower margin of the cone. The open end of the cone should always be allowed to remain free and unobstructed, admitting pure air without restraint. If the child is very much reduced from prolonged disease, and the operation is apt to be a long and dangerous one, every precaution must be taken to preserve the vital forces. The child's body should be swathed in cotton batting or an electrotherm may be used on the operating table. There must be absolute quiet in the room, and only the anesthetist and the nurse should be present. The article closes with specific directions as to the method of etherization and how to meet emergencies.

Virginia Medical Semi-Monthly.

June 9.

87 *The Use of the Uterine Curette. J. W. Bovée, Washington, D. C.
88 Treatment of Neurasthenia. J. A. Hodges, Richmond, Va.
89 Static Electrical Treatment of Neurasthenia. R. W. Miller, Barton Heights, Va..
90 Myoma of Uterus. J. M. Hundley, Baltimore, Md.
91 Tuberculosis Among the Mountains of Southern West Virginia. J. W. Preston, Keystone, W. Va.
92 Closure of Abdomen by Longitudinal Suture. E. B. Claybrook, Cumberland, Md.
93 Chronic Suppuration of Middle Ear. F. M. Cunningham, Macon, Ga.
94 Abscess of the Liver. M. E. Nuckols, Richmond, Va.
95 Principles of Surgery. S. McGuire, Richmond, Va.

87. **Use of Uterine Curette.**—As the result of an extensive experience, Bovée says he has developed the curette touch. The dull variety is to be used for the removal of shreds of tissue after abortion or miscarriage. The sharp serrated instrument becomes necessary in the removal of intrauterine growths. The plain, sharp curette is employed in all forms of endometritis not associated with malignant disease of the uterus that does not spring from the mucosa, carcinoma of the body, pedunculated submucous fibroids, mucous polypi, subinvolution, metritis and chronic passive uterine congestion. The dull, serrated curette is applicable to practically all the conditions for which the plain, dull curette is used, and is by some considered preferable. These, Bovée says, are practically all the conditions in which uterine curettage is applicable. Doing curettage in the office and sending the patient home afterward he considers malpractice, inasmuch as the technic of such a procedure must be very faulty and the danger of the infection enormously enhanced.

Kansas City Medical Index-Lancet.

June.

96 Etiology and Pathology of Acute Articular Rheumatism. L. G. Taylor, Kansas City, Mo.
97 Diagnosis and Prognosis of Acute Articular Rheumatism. A. Miller, Kansas City, Mo.
98 Complications of Acute Rheumatic Fever. F. Murphy, Kansas City, Mo.
98½ Treatment of Acute Articular Rheumatism. B. H. Zwart, Kansas City, Mo.
99 What Shall We Prescribe? R. P. Walker, Belton, Mo.

Postgraduate, New York.

June.

100 Epidural Abscess. W. S. Bryant, New York.
101 Transthoracic Resection of the Lower End of the Esophagus in a Dog. W. Myer, New York.
102 Case of Poliomyelitis with Multiple Deformities Corrected. H. L. Taylor, New York.
103 Case Showing the Result of the Stacke Operation for Chronic Suppuration of the Middle Ear. W. C. Phillips. New York.
104 Case of Diffuse Idiopathic Atrophy of the Skin and Scleroderma. W. B. Brown, New York.
105 Card System for Patient's Histories. G. G. Ward, Jr., New York.
106 Case of Congenital Cohesion of the Labia. Id.
107 General Practitioner's Diagnosis of Nasal Sinus Disease. H. B. Douglass, New York.

Archives of Physiological Therapy, Boston.

May.

108 Effect of the X-ray on Pregnancy. S. Tousey, New York City.
109 Value of X-ray in the Treatment of Tuberculosis. H. K. Pancoast, Philadelphia.
110 Interpretation of Radiographs of the Chest. P. M. Hickey, Detroit, Mich.
111 Notes on X-light. W. Rollins, Boston, Mass.
112 Portable Illumination Box. G. E. Pfahler, Philadelphia.

California Medical and Surgical Reporter, Los Angeles.

June.

113 History of Syphilis. R. Williams, Los Angeles.
114 Primary and Secondary Lesions of Syphilis. R. Wernigk, Los Angeles.
115 Moral Aspects of Syphilis. G. MacGowan, Los Angeles.
116 Syphilis of the Nervous System. R. Moore, Los Angeles.
117 Syphilis of the Eye and Upper Air Passages. H. B. Ellis, Los Angeles.
118 Syphilis of the Bones. J. Kurtz, Los Angeles.
119 Syphilis of the Placenta. T. J. Coffey, Los Angeles.
120 General Treatment of Syphilis. C. D. Lockwood, Pasadena, Cal.

Louisville Monthly Journal of Medicine and Surgery.

June.

121 Intranasal Deformity and Redundancy and Their Relations to Diseases of the Upper Air Passages. T. L. Brunk, Birmingham, Ala.
122 Diabetic Gangrene. H. H. Grant, Louisville, Ky.
123 Grip. B. C. Frazier, Louisville, Ky.
124 Visit to New Mexico. G. H. Chapman, Uniontown, Ky.

Illinois Medical Journal, Springfield.

June.

125 Ideals and the Practices of the Medical Profession. W. E. Quine, Chicago.
126 What We Must Learn and Unlearn in the Treatment of Tuberculosis. J. W. Pettit, Ottawa.
127 High Frequency in Insomnia. W. F. Somerville, Glasgow, Scotland.
128 Impotence and Sterility Due to Gonorrhea. F. A. Lensman, Chicago.
129 Relation of the Heart and Kidneys in Disease. C. E. Wilkinson, Danville.
130 Operative Treatment of Empyema of the Antrum of Highmore. O. T. Freer, Chicago.
131 Educational Treatment of Neurasthenics. C. D. Center Quincy.
132 Nitrous Oxid-Ether Anesthesia. W. Van Hook, Chicago.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

July 1.

1 Presidential Address delivered before the Metropolitan Counties Branch. The British Medical Association and the Advancement of Science. A. Clark.
2 *Presidential Address delivered before the Lancashire and Cheshire Branch, Alcohol as a Therapeutic Agent. J. Barr.
3 Cold Effusion in Delirium Tremens. W. Broadbent.
4 Radium Bromid in the Treatment of Rodent Ulcer. A. R. Manby.
5 *Leucocythemia Treated by the X-rays, with a record of four cases. C. H. Melland.
6 Treatment of Ringworm of the Scalp by the X-rays. T. M. H. Macleod.
7 General Peritonitis Due to Perforative Appendicitis. A. W. M. Robson.

2. **Alcohol as a Therapeutic Agent.**—Barr states that it is impossible to foretell the action of alcohol in any particular case or to know whether it is going to do good or harm. He dissents from the popular opinion that constant use of alcohol confers immunity from its toxic effects and says that with increasing years men are able to stand less and less alcohol, while in advanced age the results of free imbibition are disastrous. From its irritating action on the nerves of the stomach alcohol may cause a temporary contraction of the splanchnic vessels and a slight rise in the general blood pressure. Once absorption takes place, however, it has a paretic effect on the vasomotor system and the arterial blood pressure falls. There

is then a rush of blood to the surface through the paretic vessels; the nerves and vessels lose their power of regulating the body temperature and consequently there is a large cooling surface which allows of a rapid lowering of the temperature. This effect may explain the value which some German physicians attach to the use of alcohol in conjunction with cold baths. Barr states that in pneumonia almost the only use of alcohol is as a specific. He also states that alcohol is not a food in the proper sense of the word and that the advice of the Apostle Paul to Timothy to take a little wine for the stomach's sake must have referred to a fairly dilute solution of alcohol, as we know that while strong potations increase the secretion of gastric juice they inhibit the digestive function. Barr refers at some length to the effect of alcohol in various diseased conditions.

5. **Leucocythemia Treated by the X-Rays.**—Melland reports 4 cases of this condition in which the *x*-rays were used, with good results in 3 cases. In each case the spleen diminished in size with improvement in the character of the blood, the degrees of improvement differing in the 3 cases. The improvement in the general health of the patients, however, was more marked and of greater importance than the changes in the blood or in the spleen. He states that though it is too soon to assert that permanent benefit has been conferred in these conditions, it can safely be asserted that great amelioration of the conditions may be secured and that even if complete cure be not effected, the patients may have months or even years of comfortable existence.

The Lancet, London.

July 1.

8 Diseases of the Heart. J. F. Goodhart.
9 *Reaction of Phenylhydrazin with Other Substances than Dextrose Occurring in the Urine. P. J. Cammidge.
10 Uric Acid: A Rational Treatment for Its Elimination in the Light of Recent Research. R. Fenner.
11 Recent Outbreak of Typhoid Fever at Lincoln. E. C. Clements.
12 Charcot's Disease of the Ankle in a Case of General Paralysis of the Insane. W. Billington.
13 Fracture of the Os Penis in Otters. J. Bland-Sutton.

9. **Reaction of Phenylhydrazin.**—Cammidge describes a modification of von Jaksch's phenylhydrazin test as follows: 0.5 gram of phenylhydrazin hydrochlorid and 1.5 grams of sodium acetate should be dissolved by gentle heat in a few cubic centimeters of water in a test tube and then from 5 to 10 c.c. of the urine added. The mixture is brought to the boiling point and maintained there for three minutes with strong, and five minutes with weak, solutions of sugar. The test tube is then set aside to cool and the deposit examined for osazone crystals in five or ten minutes. A "knife point" of sodium acetate is added to 10 c.c. of the urine, then from 1 to 2 c.c. of 10 per cent. acetic acid, and 5 drops of pure phenylhydrazin are introduced. The mixture is heated in the water bath or over the free flame in the same way as when hydrochlorid is employed. Cammidge also mentions Kowarski's modification of this test, which gives very satisfactory results and is more delicate. It consists in mixing five drops of pure phenylhydrazin in a test tube with ten drops of acetic acid, gently shaking and then adding about 1 c.c. of a saturated solution of sodium chlorid. To the solid mass that forms are added from 3 to 5 c.c. of the urine, and the test tube is heated in the free flame for two minutes after its contents begin to boil. On cooling, the osazone crystals separate from urines containing 0.2 per cent. of sugar in one minute, and from weaker solutions in about five minutes. In examining 100 normal urines Cammidge found that when heated in the water bath for an hour four of them showed a crystalline deposit, while by boiling in a free flame for five minutes six specimens gave a positive result. Using the same methods but shortening the period of heating to twenty minutes and two minutes respectively exactly the same results were obtained, so that the mere time or method of applying the heat can not be relied on to differentiate glycuronic acid from the sugar. Cammidge describes in detail his further researches on this subject and concludes by saying that it is evident that in phenylhydrazin we possess a most useful reagent for inquiring into variations in the urine accompanying certain changes in the metabolism.

Intercolonial Medical Journal of Australasia, Melbourne.

May.

14 Tuberculous Meningitis. W. H. Summons.
15 *Note on Goat's Milk. A. J. Wood.
16 Hysteria in Children. W. H. Summons.
17 Three Cases of Obstruction of the Small Intestine. A. E. Morris.
18 Case of Pylorectomy and Partial Gastrectomy—Posterior Gastro-Jejunostomy—Recovery. R. S. Stirling.

15. **Goat's Milk.**—Wood refers to the difficulty in all large cities of obtaining fresh milk for infants and advises the use of goat's milk for bottle-fed infants. He states that a number of infants under his care have been fed through the whole summer on pure goat's milk and have never had diarrhea. He says that the mother of one of the children reported that the child digested the milk without the least sign of flatulency when it was given warm from the goat, while the digestion was not so easy if the milk had stood for some hours. He says that most children can digest goat's milk undiluted and that while taking it they gain in weight and development. He calls attention to the custom in Switzerland and in some parts in Italy of shaving the udders and allowing the babies to nurse directly from the goat.

Annales de Dermatologie, Paris.

Last indexed XLIV, page 1407.

19 (VI, No. 3.) *Recherches sur l'alopécie atrophiante, variété pseudo-pelade. L. Brocq, Lenglet and Ayrignac. (Commenced in No. 1.)
20 De quelques altérations cutanées déterminées par l'enveloppement humide (sudamina de maceration). C. Audry.
21 (No. 4.) *Sur le processus histologique des radio-épithélites (action des rayons X sur l'épiderme normal et sur les tissus epitheliomateux). E. Dalous and J. Lasserre (Toulouse).
22 De la compression en photothérapie. (Un nouveau compresseur mécanique enregistreur.) M. Mezerette.
23 (No. 5.) *La symbiose fuso-spirillaire. H. Vincent (Val-de-Grâce.)
24 Dermatite pustuleuse prémycosique. C. Audry (Toulouse).

19. **Atrophic Alopecia.**—An illustrated description is given in this article of a new clinical form of atrophic alopecia, for which the term "pseudo-pelade" is adopted. It is a process of atrophy and sclerosis affecting the hair-covered regions of the body, especially the scalp, terminating in patches of baldness, smooth, of pseudo-cicatricial aspect. It seems to be closely allied to erythematous lupus and keratosis pilaris. The article is based on three cases.

21. **Action of X-Rays on the Tissues.**—The microscope reveals that there are certain special lesions due to the action of the Roentgen rays on the epithelium, an actual "radio-epithelitis," as Dalous styles it. Similar modifications occur in the tissue of a neoplasm, and as they develop they induce a macrophagic connective-tissue reaction. All the cells of the neoplasm do not feel the effect of the rays to the same degree, some being more sensitive than others. In the sound epithelium the basilar layer, or *stratum germinativum*, and the cells of the mucous layer, immediately above, are affected most, and the corresponding cells in an epithelioma. On the other hand, the cells of the prickle layer and of the horny layer are too firmly interlocked and too large to be effectually attacked by phagocytosis. The latter process, besides, seems to be secondary in importance. The histologic findings described explain why epitheliomata of the type of the cancroid and the squamous epithelioma are less favorably influenced by radiotherapy than epitheliomata of the basocellular type, columnar epithelioma and rodent ulcer. The Roentgen rays are decidedly elective in their action. The most sensitive cells in the neoplasm are those which are derived from cells which normally are most sensitive to the action of the rays. In cutaneous epitheliomata, therefore, the squamous and the columnar types, the former are resistant to the *x*-rays and the latter succumb to them, corresponding to the elective action of the *x*-rays on the cells of the sound epidermis.

23. **Association of the Fusiform Bacillus and a Spirillum.**—Vincent has been continuing his researches on the symbiosis of the fusiform bacillus and a spirillum which induces the affection known as Vincent's angina. Its occurrence has been reported in all countries, generally affecting persons between 18 and 30. His own experience has been that it forms 2.26 per cent. of all cases of sore throat. The fusiform bacillus is a normal inhabitant of the buccal cavity, it is ubiquitous, like

the tetanus bacillus, and, like the latter, requires special conditions for its development. These conditions are depressed vitality from any cause, starvation, cachexia, or chemical or microbian intoxication, with a lesion caused by some other microbe. When the organic defenses are broken down, the fusiform bacillus installs itself and is liable to proliferate to an amazing extent, causing vast suppurations when air does not reach the parts. In 17 cases of subperiosteal dental suppuration he found this fuso-spirillar symbiosis in 7 instances, and once in pure cultures. This symbiosis was also found in 11 out of 19 cases of appendicitis, in periostitis of the tibia or fetid abscess of the leg, etc. He is convinced that noma and gangrene of lungs or pleura are the result of fuso-spirillar infection. The angina due to this symbiosis he regards as a kind of hospital gangrene of the mouth. The superficial lesions are identical under the microscope, but in the depths the fusiform bacillus vegetates alone, with a necrobiotic and hemorrhagic action. He adds the literature, which amounts already to 131 articles since his first publication in 1896. Inoculation of a healthy person with hospital gangrene or the fuso-spirillar combination induces merely an insignificant reaction and lesion.

Berliner klinische Wochenschrift.

25 (XLII, Nos. 24-25.) *Pathologische Anatomie und Infektions-Weg bei der Genickstarre (epidemic cerebrospinal meningitis). Westenhoeffer. Id. und Bekämpfung (prophylaxis). M. Kirchner. Id. Grawitz.
26 *Zur Pathogenese der Lungen-Tuberkulose. F. Weleminsky (Prague).
27 Schwierigkeiten der Indikations-Stellung zur Operation bei Jackson'scher Epilepsie. W. Vorkastner.
28 *Ocular Disturbances in Epidemic Cerebrospinal Meningitis.—Augenstörungen bei der Genickstarre. Heine (Breslau).
29 Fall von Bronchial-Kolik infolge Broncho-Lithiasis. A. Muszkat.
30 *Drowning and Resuscitation.—Ertrinkungsgefahr und Rettungswesen an der See. E. Margulies.
31 *Practical Aspects of Hemolysis.—Beziehungen der Hämolyse zur Praxis. Hahn (Nauheim).
32 Production of Antibodies a Secretory Cellular Process.—Die Antikörperproduktion als cellulärer Sekretions-Prozess. H. Lüdke.

25. **Epidemic Cerebrospinal Meningitis.**—Westenhoeffer's report on 29 autopsies of victims of the epidemic was mentioned on page 1996 of the last volume of THE JOURNAL.

26. **Pathogenesis of Pulmonary Tuberculosis.**—Weleminsky's research has revealed the exceptional position occupied by the bronchial glands in the lymphatic system. Guinea-pigs were infected with tuberculosis at various points and the glands examined later. It was found that the infection never occurred through the blood, but always by way of the lymphatics. The bronchial glands seem to be the terminal reservoir not only for the lung lymph, but also for the lymph from the rest of the body, before it is poured into the blood system. When animals were inoculated in the peritoneum, rectum or subcutaneously in the groin, at first it seemed as if the infection followed an arbitrary, erratic course, but the discovery of hidden glands showed the regular sequence of the progress of the infection, without an exception, in his last 300 experiments. The bronchial glands are like a kind of heart, into which the lymphatics from all sides discharge their contents, including tubercle bacilli from remote points of entrance.

28. **Ocular Symptoms in Epidemic Cerebrospinal Meningitis.**—Heine writes from the eye clinic at Breslau in regard to the ocular disturbances noted in an experience of 100 cases of epidemic cerebrospinal meningitis. The pseudo-glioma characteristic of this disease leads to atrophy of the eyeball, but, although the eye is blind, it is not disfigured and never requires operative interference. This form of severe metastatic ophthalmia never entails sympathetic ophthalmia. This finding is so characteristic of epidemic cerebrospinal meningitis that we may almost conclude from it in regard to the pronounced or abortive occurrence of the disease at some past time. In his experience, with a single exception, it has been unilateral, but the milder affections, which do not reach this severe stage, frequently appear in both eyes. The one exception was a child, blind and deaf as the result of the disease, with bilateral pseudo-glioma. He reviews the experiences at other hospitals throughout Silesia. In every 100 patients, 20 presented ocular symptoms, the total list including 15 involving the motor apparatus, 10 the optic nerve tract, and 5 the interior of the eye. In his own 100 patients, optic neuritis and disturbances in the retina were observed in 9 patients and were probable in 5 more. In 13 there were nystagmus, strabismus or paralysis, etc., probable in 2 more, and unilateral ophthalmia in 3, bilateral in 2, the total being 21 patients, with 27 positive and 7 probable ocular disturbances. In conclusion, he reviews what has been written lately on the subject. He has never had occasion to see some of the symptoms described by other authors, such as edema of the conjunctivæ and subepithelial infiltration of the cornea. He calls attention to the rarity of winking, especially at the onset of the disease. It may aid in differentiation.

30. **Death from Drowning.**—Margulies shows that the first phase of drowning—that of arrested respiration—lasts from 31 to 76 seconds, according to different authors. The second stage, that of dyspnea, lasts from 60 to 150 seconds, Brouardel favoring the shorter time. The drowning man breathes deep, with open eyes, and swallows water. The third stage—that of asphyxia—lasts for one minute, according to Brouardel, and the terminal respiratory movements for about 30 seconds longer. Rescue during the first minute of drowning has every chance of success; the chances during the second minute are less favorable, and after the beginning of the third minute they grow more and more dubious. Brouardel has further established the fact that when an animal is drowned after excessive muscular fatigue these various stages of the drowning succeed each other in less than half the time required in normal conditions. One factor that prolongs the act of drowning is that the drowning person is liable to come to the surface and get a breath of air, thus postponing the terminal stage. In sea bathing, to prevent accidents from drowning, Margulies advises that attendants be stationed where they can reach a drowning person in less than one minute. No time should be wasted in throwing life preservers, but the attendant must be ready with a boat. As the interval is so much shortened in case of fatigued muscles, a narrow limit should be set for the swimmers, any one passing beyond that limit doing so at his own risk, on account of the inability to reach him in the half of the brief interval on which one can count in the case of other drowning persons.

31. **Hemolysis in Relation to Practical Medicine.**—Hahn's numerous experiments and experiences with human volunteers confirm Koeppe's assertions in regard to hemolysis from acids and heat. He further concludes that alcohol is a decided poison for the blood corpuscles, inducing hemolysis proportionately to the concentration and, with a given concentration, proportionately to the temperature. The intensity of the hemolytic action is further dependent on its duration. When supplemented by the action of chloral, the alcohol hemolysis is reinforced. The superposed action of alcohol and chloral—even at normal temperatures—suggests the advisability of caution in administering chloral to alcoholics, and also in case of fever. The alcohol further diminished the resisting power of the red corpuscles and rendered them more susceptible to other injurious influences. The melting point of the blood corpuscles was lowered in proportion to the concentration. He believes that the alcohol plus chloral dissolves out the fatty elements in the wall of the blood corpuscles, thus inducing hemolysis by another mechanism from that of the osmosis of water hemolysis.

Deutsche medicinische Wochenschrift, Berlin and Leipsic.

33 (XXXI, No. 23.) *Die Behandlung der puerperalen Infektion. v. Rosthorn.
34 Der günstigste Zeitpunkt der Appendicitisoperation (moment for operating). L. Arnsperger.
35 *Zur Pathogenese der Hirschsprungschen Krankheit. J. Ibrahim.
36 *Pseudo-leukemic Affections due to Tuberculosis.—Ueber die durch Tuberculose bedingten pseudoleukämischen Erkrankungen und ihre Behandlung mit Neu-Tuberculin. O. Reunert.
37 Weitere Mitteilung über Syphilis-Impfung am Pferde (inoculation of horse). Piorkowski.
38 Testing Sense of Taste.—Eine neue Methode zur klinischen Prüfung des Geschmackssinnes mittels eines Gustometers. W. Sternberg.
39 Results of Koch's Research on African Horse and Cattle Disease.—Küstenfieber der Rinder und Pferdesterbe. F. K. Kleine.
40 *Zur Geschichte der epidemischen Cerebrospinal-meningitis (history). A. Gottstein.
41 Study and Practice of Medicine in Italy. Carrara.

33. **Puerperal Infection.**—Rosthorn passes in review the various methods of treating puerperal infection, remarking in regard to intravenous infusion of a solution of formol that this method of treatment has been discarded on account of its dangers, demonstrated by experiments on animals. He is convinced that intravenous injection of the silver salts is perfectly harmless, with good technic, but that their action is unreliable. They probably act by their chemotactic inhibiting influence on the bacteria, but enormous quantities of leucocytes are sacrificed in the struggle. If the blood-forming organs are unequal to the task, then the drug fails to cure. There is also a possibility of some electro-catalytic action. On account of its harmlessness and our helplessness generally, the method should be given a trial and not be dropped too quickly. He gives, in a table for comparison, the details of the six antistreptococcus sera on the market, Marmorek's, Aronson's, Tavel's, Moser's, Meyer's and Paltauf's. The reason why serum treatment fails so completely in one case and succeeds so brilliantly in an apparently entirely similar case is a matter for further research. Tavel suggests that there may be a lack of cytases or leucocytes in the negative cases, and that it may be possible to supply the missing elements when we learn which they are.

35. **Congenital Dilatation of the Colon.**—Ibrahim gives illustrations of an infant with an abnormally long and flexible sigmoid flexure, inducing tympany and stagnation of feces. He regards the case as the initial stage of idiopathic dilatation of the colon.

36. **Pseudo-Leukemic Affections Due to Tuberculosis.**—Reunert remarks that the diagnosis of the tuberculous origin of a pseudo-leukemia affection is rarely made during life. In the case he describes, the presence of a tuberculous iritis suggested the advisability of treatment with "new tuberculin." This treatment not only cured the iritis, but with it also all the symptoms of the pseudo-leukemic affection, thus demonstrating its tuberculous nature. The first manifestations of the affection were noted in the spleen and glands, predominantly the former. Nothing suggested tuberculosis until the iritis developed. It was not influenced by antisyphilitic treatment, and tuberculin was tentatively tried on the assumption that the ocular affection had possibly developed secondarily. The prompt healing of the iritis and, with it, the vanishing of all the pseudo-leukemic symptoms cleared up the diagnosis. The ocular affection is entirely healed, but whether the glandular affection has healed or merely entered on a phase of latency time alone will tell. The patient was a boy of 8. The new tuberculin was used according to von Hippel's technic, as described in the *Archiv. f. Ophthalmologie*, lix, No. 1, which is free from all danger. The injections commence with 1/500 mg. of solid substance, repeating on alternate days, and increasing the amount by 1/500 mg. until 1/50 mg. is reached. The amount is then increased by 1/50 mg. until 1/5 mg. is reached, then gradually increasing to the maximal dose of 1 mg. The temperature is taken every two hours, and if the temperature rises by .5 of a Centigrade degree the same dose is continued until there is no temperature reaction. The patient was dismissed, cured, in about three and a half months.

40. **History of Cerebrospinal Meningitis.**—Gottstein says that the history of this disease can not be traced farther back than 1805; previously to that date it was probably confused with typhoid. He cites the older authorities and mentions that the exanthem was described even in the earliest epidemics.

Therapie der Gegenwart, Berlin.

Last indexed page 295.

42 (XLVI, No. 2.) *Zur therapeutische Anwendung (application) des Nitroglycerins. C. Binz (Bonn).
43 *Ueber den Wert des Formaldehyds für die interne Therapie. P. Rosenberg (Berlin).
44 Weitere Beobachtungen zur Salicylbehandlung (die intravenöse Infection). Th. Brugsch (Altona).
45 *Zur Behandlung des Schnupfens der Säuglinge (infantile coryza). L. Ballin (Berlin).
46 Die Behandlung der chronischen Verdauungskrankheiten im Säuglingsalter (digestive disorders of infants). H. Roeder (Berlin).
47 Early Diagnosis of Orthopedic Affections and Its Importance. —Die Frühdiagnose bei orthopädischen Erkrankungen und ihre Bedeutung für die Prognose. G. Müller.
48 Die Behandlung der Gallensteinkrankheit (cholelithiasis). G. Klemperer (Berlin).

42. **Use of Nitroglycerin.**—Binz showed long ago that nitrates may be converted in the system to nitrites. This action is the basis of the therapeutic efficiency of nitroglycerin. The results of various investigations concerning the toxic power and fatal dose of nitroglycerin have shown great differences of opinion among clinicians. Some regard it as a poison equal to prussic acid or nicotin, while others have found a tolerance of doses much larger than those usually thought safe, and two cases have been observed in which large amounts were taken without harm. Binz found, by experiments on animals, that doses much larger than those used in medicine produced no toxic effect. Man may react more readily, and there may be great differences between individuals. Binz found that one set of tablets contained scarcely a trace of the drug, while another showed more than the required quantity. The dry form, therefore, should be discarded for an alcoholic 1 to 4 per cent. solution. Of these solutions, one drop should be used as the initial dose, which may be gradually increased. Each drop represents from ¼ to 1 mg. of the nitroglycerin. This drug has the advantage over sodium nitrite that it is not decomposed in the stomach, while it is more gradual in its action and more lasting in its effects than amyl nitrite. It has no explosive action when dissolved in alcohol, and, he thinks, may well supersede the nitrites.

43. **Value of Formaldehyd in Internal Medicine.**—Contrary to the views of previous authors, Rosenberg does not believe formaldehyd to be highly poisonous and corrosive. Hundreds of patients who came under his observation showed no toxic action, and in all cases in which the blood and urine were examined there was no evidence of toxic action, no casts, and no albumin or changes in the blood. Because of their different action, formol and formalin should be distinguished from formaldehyd. The toxic action previously attributed to formaldehyd is due to its irritating qualities, and even these depend on the manner of its use. The irritating quality can be removed by combining formaldehyd with another substance from which it may be gradually split off. Jacobson experimented with such a preparation and demonstrated that it is non-toxic. When properly administered, formaldehyd has never had any bad effect on the human organism, even in pathologic conditions, and usually proved beneficial. Rosenberg claims to have found a stable preparation of formaldehyd in a compound from which it is gradually split off in the organism. It is administered in tablet form, and he regards it as a great advance in medication. The pleasant-tasting tablet may be held in the mouth, chewed, or taken in solution, but should not be swallowed whole. He is convinced that its use might be successfully extended to typhoid. It has not yielded conclusive results in tuberculosis, but it has proved very effectual in his practice in the last few months. He has used it exclusively in 6 cases of diphtheria, in 7 of scarlet fever, 2 of erysipelas, 1 of pyemia, 2 of cystitis and 45 of tonsillitis. Each tablet contains 1 cg. of formaldehyd in a loose combination with milk, sugar and menthol, with some ordinary sugar and a little pepsin, hydrochloric acid and an aromatic vehicle.

45. **Treatment of Coryza in Infants.**—Ballin believes that the treatment of coryza in infants is especially important because the local obstruction to breathing sometimes prevents nursing, thus necessitating artificial feeding and often resulting in marked loss of weight. It may cause sudden death from asphyxia or from complicating capillary bronchitis, which is due, he thinks, principally to aspiration of infectious secretions from the nose. The swelling and secretion in the nose must be reduced, and, since cocain is too dangerous, he recommends soaking a small tampon of cotton in a 1 per cent. solution of adrenalin, and placing it in each nostril alternately, leaving it from two to three minutes. The mucous membrane becomes anemic, the swelling is reduced, and a mass of secretions comes away from the nose. Since the effect of this swabbing only lasts from three to four hours, it is necessary to repeat it three or four times daily, or even before every feeding, and to continue as long as needed. In cases of weak infants, with an exceedingly stubborn, bloody, purulent secretion as the result of a marked rhinitis, he uses a .5 to 1 per cent. silver nitrate solution in addition to the adrenalin. A

drop of this should be applied once a day after the application of the adrenalin until the secretion stops permanently. Of 75 children affected with coryza, 48 were treated with adrenalin and the others were not. Only 12.5 per cent. of those so treated had bronchitis, while 44.4 per cent. of those not so treated were affected with it. In syphilitic coryza it is not only locally beneficial, but prevents a large number of deaths which would otherwise occur from aspiration pneumonia.

Virchow's Archiv, Berlin.

Last indexed page 143.

49 (CLXXIX, No. 3.) Proportion of Ash, Total and Residual Nitrogen in Blood, Exudates and Transudates in Various Diseases.—Gehalt des Blutes, etc., an Trockensubstanz, Gesamt- und Reststickstoff, etc. K. v. Rzentkowski.
50 Zum Studium der Mast-Cellen. Fahr.
51 Negative Judgment on Cell Inclusions Described as Protozoa in Variola.—Ueber die als Protozoen beschriebenen Zell-Einschlüsse bei Variola. P. Schrumpf.
52 Vorkommen parasitärer Organismen in Geschwülsten (in tumors). L. Blum.
53 Die Protozoen des Scharlachfiebers (of scarlet fever).C. W. Duval.
54 Origin of "Implantation" Tuberculosis of Peritoneum and Its Relation to the Doctrine of Inflammation.—Implantations-Tuberkulose des Bauchfells, ihre Entstehung, etc. G. Guyot.
55 Zur Lehre vom Aneurysma spurium. W. Kallenberger.
56 Cutaneous Tumor with Gaseous Hypertrophy of Protoplasm.—Schaumzellentumor der Haut. K. Sick (Berne).
57 Islands of Gastric Mucosa in Upper Esophagus.—Zur Histologie der Magenschleimhautinseln im obersten Oesophagusabschnitte. H. Schridde.

Wiener klinische Wochenschrift, Vienna.

Last indexed XLIV, page 1971.

58 (XVII, No. 14, April 6.) *Funktionsstörungen der Nebenniere bei Allgemeinerkrankungen, Intoxikationen und Infektionen (functional disturbances of adrenals). F. Luksch.
59 Ueber die aggressive Wirkung von Diplokokken-exsudaten. E. Hoke.
60 *To Outline the Heart by Indirect Palpation.—Die Grenzbestimmung des Herzens und seiner Abschnitte mittels indirekter Palpation des Impulses. L. Kurt.
61 *Ueber Augenmuskel-Rheumatismus (of ocular muscles). K. Pichler.
62 (No. 15.) Toxin and Antitoxin. R. Grasberger and A. Schattenfroh.
63 *Hüftgelenks-Resektion mit totaler Kapsel-Exstirpation, nebst Bemerkungen über die Total-Exstirpation des tuberkulösen Huftgelenkes (hip joint). A. Lorenz and M. Reiner.
64 Ueber Autolyse in Punktions-Flüssigkeiten (puncture fluids). E. Zak.
65 Modification of Mosetig Bone Filling.—Zwei etwas modifizierte Anwendungsweisen der v. Mosetigschen Knochenplombe. B. Mayrhofer.
66 (No. 16.) Experiences with Anesthetics in 700 Cases.—Ueber neuere Narkosen-Mittel und -Methoden, insbesondere Morphin-Skopolamin. R. Puschnig.
67 Immunization Against Chicken Cholera.—Die passive Aggressin-Immunität bei Hühnercholera. E. Weil.
68 Die diätetische Behandlung des Diabetes mellitus. M. Mann.
69 Obstruction of Murphy Button by Olive Stone or Scybala.—Zur Kasuistik der Gefahren bei Anwendung des Murphy-Knopfes. Phillipp.

58. **Study of Suprarenal Functioning in Disease.**—Luksch estimates the functional disturbance in the suprarenals by the lesser pressure-raising power of the extract. His research on various animals showed that the suprarenals are not materially affected by various pathologic conditions, starvation, fever, etc., but that others, such as uremia, phosphorus poisoning, diphtheria and various infectious processes, apparently arrested the suprarenal functioning. The extract of the organs under these conditions failed to display the normal pressure-raising property. This functional disturbance in the suprarenals is probably one of the injurious factors that co-operate in serious infectious processes.

60. **Indirect Palpation to Outline the Heart: the Ictometer.**—Kurt uses a wooden rod, about 20 cm. long, with a small plate at each end, to estimate the movements of the thorax wall over the heart. He calls it the ictometer, as the heart beat is sometimes called the ictus. It is possible with this little instrument to note delicate variations in the heart action, over different segments of the heart, as he describes in detail.

61. **Rheumatism of Ocular Muscles.**—Pichler has observed 4 cases of involvement of the tendons of the muscles of the eye in 160 cases of acute articular rheumatism. He believes that this rheumatic eye affection is liable to be diagnosed as episcleritis, and treated on a mistaken basis, when antirheumatic remedies would soon cure it.

63. **Extirpation of Tuberculous Hip Joint.**—Lorenz and Reiner advocate operating far into sound tissue, removing the capsule entirely, and not opening into the joint until the capsule has been completely detached from all the soft parts. To do this it is necessary to make an incision both in front and at the back of the joint. The connection between the trochanter major and the femur is left undisturbed. By this technic the unopened joint with the intact sac of the capsule is extirpated *in toto*. The leg is not much shortened, as the entire length of the femur from the tip of the trochanter is retained. They assume that the period of greatest painfulness coincides with an intra-articular abscess, and that this is the best time for the operation. Their experience with this technic has been very favorable.

Gazzetta degli Ospedali, Milan.

Last indexed page 227.

70 (XXVI, No. 28.) *Contributo clinico alla patogenesi vasomotoria dell' asma bronchiale. F. Galdi.
71 Iodo-Iodid Injections in Malarial Spleen.—Metodo Parona nei tumori cronici di milza da malaria. E. Grande.
72 High Frequency Currents in Ozena.—Intorno alle applicazioni delle correnti ad alta frequenza nell'ozena. Hahn.
73 (No. 31.) Diminished Resistance to Infections as Cause of Death After Removal of Thymus in Frogs.—Morte delle rane dopo l'estirpazione dei timi. G. A. Pari.
74 Sul valore terapeutico del siero antibacillare. G. Ricci.
75 *La terapia delle appendiciti. E. Maragliano.
76 (No. 34.) N-Rays.—Sui cosi-detti raggi N. V. Maragliano.
77 *Arterial Pressure in Disease.—Tensione arteriosa nell'uomo allo stato patologico. A. Torchio.
78 *Infectious Icterus, etc.—Ittero infettivo, atrofia giallo acuta del fegato e cirrosi biliare ipertrofica. G. Zanardini.
79 *Il trattamento dell'eclampsia gravidica con la paratiroidina. G. Vassale.
80 (No. 37.) Interpretazione di alcuni rumori sistolici dell'aorta (systolic aortic sounds). G. Curlo.
81 Present Status of Edebohl's Decapsulation.—La cura chirurgica nelle nefriti mediche. L. Cesari.
82 (No. 40) Right pleural Effusion in Heart and Liver Affections.—Versamento pleurico a destra nelle cardiopatie e nella cirrosi epatica. V. Glauni.
83 *Inconstancy of Salicylates.—Sull'azione incostante dei salicilici nel reumatismo poliarticolare. A. Cerioli.
84 (No. 41.) *X-Rays in Recurring Leukemia and Banti's Disease.—I raggi X nella malattia di Banti, etc. C. Bozzolo.
85 (No. 43.) *Prognostic Importance of Alkaline Phosphates in Urine in Pneumonia.—Sul valore pronostico dei fosfati alcalini nelle orine dei polmonitici. F. Sicuriani.
86 *Operation for Umbilical Hernia.—Cura delle ernie del cordone ombelicale. A. Dal Vesco.
87 In Defence of General Anesthesia.—In difesa dell'anestesia generale. G. Stella.
88 Cure of Tuberculous Peritonitis with Local Injections of Iodo-Iodid Solution.—La guarigione della peritonite tubercolare colle iniezioni iodo-iodurate alla Durante. G. Reale.

70. **Vasomotor Pathogenesis of Bronchial Asthma.**—Galdi's patient exhibited typical bronchial asthma in childhood, but it vanished at puberty and did not reappear for ten years. It then returned, accompanied by symptoms indicating pronounced vasomotor disturbances, these symptoms sometimes appearing as an equivalent for the attack of asthma and subsiding as the latter became established. They included hyperidrosis, urticaria, formication and edema or sialorrhea, swelling of part of the tongue, diarrhea and intestinal disturbances. There was also copious secretion from the eyes, nose and ears. The attacks recurred at any season of the year, but they were almost entirely banished by general tonic measures, tepid sulphur baths and revulsion to the spine. The patient left before the treatment outlined had been entirely completed, regarding himself as cured.

75. **Maragliano on Appendicitis.**—This Italian clinician is an advocate of prompt intervention, urging that the simple operation harms no one, even if the person might have recovered without it, while it saves many who would have been lost without it. He quotes a writer who asks: "Which is better, to save a few appendices or the lives of your patients?"

77. **Arterial Pressure in Disease.**—Torchio has been studying the influence on the arterial pressure of various diseases and also of certain drugs. He examined 528 patients, besides a number of healthy persons, and tabulates the results. The first impression derived from study of the tables is that the arterial tension is lower in children, in both health and disease, than in adults, the proportion of cases of hypertension increasing from 7 per cent. under the age of 13 to 19 per cent. from 13 to 25, and 36 per cent. from 25 to 50, while after this age it is 61 per cent. A pressure of 115 mm. may represent medium pressure in a lad of 15, while it would be hypertension for a child and hypotension in an adult. Hypotension is the rule in typhoid fever and in pneumonia, also in tuberculosis unless complicated by lead poisoning, arteriosclerosis or alcoholism. In tuberculosis he found the arterial tension lower

the more rapid the course of the disease. The tension was higher in the cases with hemoptysis. In pneumonia the cases with very low tension and rapid pulse terminated fatally, while the patients all recovered when the pulse was more nearly normal. The tension findings in twenty-five different diseases and a miscellaneous group show that hypertension is the rule in heart and kidney affections and chronic bronchitis, less marked in neuralgia and neuroses, and medium in malaria. Rest in bed seems to reduce the tension, as also a milk diet; steam baths in nephritis and venesection also have a transient action. Adrenalin and saline infusion raise the tension. Further research on 28 persons demonstrated that injection of tuberculosis toxin materially reduces the tension.

78. **Liver Affections.**—Zanardini classifies liver affections as belonging all to a single group, with gradations of intensity. Simple catarrhal icterus leads, followed by mild but protracted icterus, and this, in turn, by cirrhosis of the liver with hypertrophy. This is favored by advanced age, by the menopause and by the liquor habit. The last member of the group is acute yellow atrophy of the liver. In this the state of the nerves and the morphologic conditions in the abdomen have a predisposing action, as also syphilis, pellagra, influenza, pregnancy and worry or a fright.

79. **Parathyroid Treatment of Puerperal Eclampsia.**—Vassale reports that the effect of an extract of the parathyroid glands in cases of puerperal eclampsia has been surprising. The convulsions were arrested so promptly that the assumption of a specific action seems almost inevitable, as it resembles so much that of the thyroid gland in myxedema. He has found the parathyroid extract useful also in tetany, and expatiates on the way in which the clinical experience harmonizes with this conception of the parathyroid origin of convulsive attacks. He is now trying the parathyroid extract in epilepsy. (See also notice on page 193.)

83. **Inconstancy of Salicylic Medication in Articular Rheumatism.**—Cerioli remarks that the curative action of the salicylates is in direct proportion to the spontaneous defense of the organism, reinforcing it but not able to cure without the co-operation of the organism. He quotes Maragliano to the effect that statistics show that the course of articular rheumatism has not been shortened since the advent of salicylic medication, to which he does not ascribe much therapeutic importance. Cerioli urges that the phases of the disease should be watched and the salicylates be given with discretion to aid Nature, not blindly and insistently, in which case they do more harm than good.

84. **Roentgen Treatment of Leukemia and Banti's Disease.**—In this communication, Bozzolo describes the subsequent history of the cases reported last July as improved under Roentgen treatment, mentioned in THE JOURNAL on page 1670 of vol. xliii. The young woman with leukemia has remained in apparent health, feeling constantly well. On one occasion the blood findings showed again a marked leukemic tendency, and Roentgen treatment was again instituted, with the same favorable effect as before. His experience with three cases of Banti's disease shows that Roentgen treatment has a beneficial action, but that it is much slower and more gradual than in leukemia. In this affection the fibrous part of the spleen is hypertrophied, and this tissue yields more sluggishly to the action of the rays than the lymphatic follicles which are involved in leukemia. The great advantage of Roentgen treatment is that the general condition improves and the patients feel constantly well, even although the blood findings fluctuate.

85. **Prognostic Importance of Phosphates in Urine in Pneumonia.**—Sicuriani concludes from his research on 25 patients with pneumonia that the alkaline phosphates vanish from the urine during the course of pneumonia. Their reappearance in the urine is the precursor of the crisis and a sign of good omen.

86. **Operation for Umbilical Hernia.**—Dal Vesco makes a short incision below the hernia and works a gauze compress between the viscera and the abdominal wall. He then passes a stout thread through the lips of the incision, over the gauze, fastened on one side by a roll of gauze, and held on the other by hemostatic forceps. He then carries the incision farther up, working the gauze along and introducing another suture, continuing this until he has the hernia well under control, the viscera held in place by the gauze spread out over them, reinforced by the suture threads passed over across it. After taking care of the hernia as usual, he completes the operation by tightening the suture threads, thus drawing the lips of the incision together, and then pulling out the gauze, concluding by fastening the ends of the threads over rolls of gauze and suturing the skin. The recuperating power of the tissues of infants insures rapid repair, while the simplicity and security of this operation commend it for general adoption, he thinks. The entire procedure is complete in less than twenty minutes, even in extensive cases.

Riforma Medica, Palermo and Naples.

Last indexed page 228.

89 (XXI, Nos. 19 and 20.) *Sulla sieroterapia della pneumonite. E. De Renzi.
90 *Methylene Blue Urine Test.—Le bleumetilenereazione, suo valore clinico. M. Russo.
91 Sull'infezione sperimentale del micrococco tetragono settico. E. Claramelli.
92 *2 casi di endotelioma dello stomaco. O. Cignozzi. (Commenced in No. 17.)
93 *Reflexes and Tremor in Neurasthenia.—Riflessi profondi e superficiali ed il tremore vibratorio delle dita delle mani nella neurastenia. G. Severino.
94 (No. 21.) Tubercle Bacillus Absent in Urine in Pulmonary Tuberculosis.—Sul preteso reperto positivo del bacillo di Koch nelle orine di malati di tuberculosi polmonare. R. Supino.
95 *Changes in the Leucocyte Formula After Injections of Iodo-Iodid Solution.—Sulle modificazioni indotte dalle inezioni iodo-iodurate sulla formola emo-leucocitaria dei bambini. A. B. Glanasso.

89. **Serotherapy of Pneumonia.**—The conclusions of De Renzi's experiences with 26 patients treated with Pane's anti-pneumococcus serum are that the general condition always improved under the serotherapy. The patients say they feel better after the injection of serum, and this is not due to suggestion. The pneumonia had attacked strong men and reduced them to an alarming condition. When they said that they felt much better after the injection of serum, it could not have been the effect of suggestion under these circumstances. The temperature always subsided after the injection. When made in the morning, by evening the temperature was found reduced. As the general condition and the temperature improved, the pulse and respiration became less rapid. He has never seen any evidence that the local manifestations of the pneumonia are improved by the serum, but, as the general condition is so much better, the local phenomena dwindle in importance as we see that the general resisting powers have been so powerfully reinforced. Another fact noted is that resolution does not occur with a crisis, but by lysis. The serotherapy evidently reduces the intensity of the disease, while it improves the general condition. The patient recovers without such loss of strength as is usual in the disease. Further evidence of this is the approximately normal blood pressure instead of the low pressure characteristic of pneumonia. Food can be taken early with a little alcohol.

90. **Methylene Blue Urine Test.**—Russo proposes a methylene blue test which he thinks may advantageously substitute Ehrlich's diazo reaction. It is much simpler, while he has found the results equally reliable. In typhoid it affords more information than the diazo test, as it indicates the exact phase of the disease. The reagent is readily made and keeps perfectly. Methylene blue added to typhoid urine gives a characteristic color reaction, the tint changing to a pronounced emerald green. He uses a 1 per thousand aqueous solution of methylene blue. Four drops are added to a test tube containing from 4 to 5 c.c. of urine, and if the reaction is positive the fluid turns an emerald or mint green. A light green or bluish green represents a negative reaction. Boiling the urine or previous ingestion of quinin, salol, calomel, euchinin, caffein or digitalis does not affect the reaction. It was encountered as early as the second or third day of typhoid in many instances, and was invariably positive in the 41 cases of typhoid and in the 32 of measles examined, paralleling the diazo reaction. In 10 cases of smallpox it was always positive, while the diazo reaction was negative in 2 of these cases. It was always negative in 10 cases of pulmonary tuberculosis in the first stage, while it was positive in 10 and negative in 20

out of 30 cases in the second stage. It was invariably positive in 25 cases in the third stage, also in 6 of tuberculous pleurisy, in 5 of tuberculous empyema and in 4 of tuberculous peritonitis, and was positive in 3 out of 5 cases of glandular tuberculosis, while the diazo reaction was positive in 4 of this latter group. Otherwise the diazo reaction nearly paralleled it. The methylene blue reaction was invariably negative in cases of scarlet fever, varicella, varioloid, influenza, bronchitis, pneumonia, and in gastric catarrh, in febrile gastroenteritis, in appendicitis, in renal lithiasis, in nephritis, in articular rheumatism, in cases of abscess in the liver, in mitral insufficiency, epilepsy, neurasthenia and malarial fever. The "mint" green tint is observed first, the emerald tone appearing as the disease reaches its height, while the tint grows more and more bluish as the patient progresses toward recovery, or the emerald tint persists till death. The constant presence of the reaction in smallpox and its absence in varicella and varioloid is an important differentiating sign.

92. **Endothelioma of the Stomach.**—Cignozzi's article is a comprehensive illustrated monograph and historical sketch on the subject of gastric endothelioma and plastic linitis. He thinks that the latter is much rarer than generally assumed.

93. **Reflexes and Tremor in Neurasthenia.**—Severino found tremor of the fingers in 88 per cent. of 75 neurasthenics examined. The tendon reflexes were increased or exaggerated in 92 per cent., while one or more of the superficial reflexes were abolished in from 70 to 85 per cent.

Revista de Medicina y Cirugia, Havana.

Last indexed XLIV, page 1892.

96 (IX, Nos. 16-17.) *Sobre infecciones piohemicas. M. G. Lebredo.
97 Lecciones de anatomia topografica (stomach). G. Pedroso.
98 (No. 18) La hemorragia post-partum. G. L. Brodhead (New York).
99 *Three Mistaken Diagnoses of Extrauterine Pregnancy.—Tres diagnosticos erroneous de embarazo extrauterino. E. Fortun.
100 (No. 21.) *Third Anniversary of Eradication of Yellow Fever.—Tercer aniversario de la eradication de la fiebre amarilla de la Habana. J. Le-Roy y Cassa.
101 (No. 22.) *Anakhre, Goundou? A. Ayala.
102 (No. 23.) Cuerpos extranos multiples de la cornea (foreign bodies). J. L. Dehogues.
103 *Caso de hemoptisis filarica. R. G. Mon and N. Carballo.
104 (No. 24) Contribucion al estadio del parasitismo humano y animal. E. Cuervo.
105 (X, No. 1.) Cistitis colli proliferans edematosa. J. Diago.
106 Regulations in regard to Milk in Cuba. G. Arostegui.

96. **Pyemic Infections.**—Lebredo draws the parallel clinical picture of three pyemic infections—glanders, general streptococcus and general staphylococcus infection. Differentiation is difficult in the clinic, and he urges physicians to apply to the Board of Health or elsewhere for bacteriologic examination of the pus without delay, if unable personally to attend to such tests. By this means, it will be possible in time to stamp out the almost invariably fatal glanders. He mentions a case of glanders personally observed, terminating in recovery. The patient was in the hospital a year and a half. The multiple abscesses were opened, in turn, and disinfected. When all had healed, except a single old one, an actual intermittent fistula, as he calls it, in the left inguinal glands, this was treated by radical extirpation. The cultures from the pus of this final lesion were negative toward the last.

99. **Mistaken Diagnoses of Extrauterine Pregnancy.**—In 2 of the cases described, there had been abortion after a few weeks of uterine pregnancy. The signs of the pregnancy were accompanied by an abdominal tumor, a sarcoma of the broad ligament in one, and an ovarian cyst in the other. In the third case, a dermoid cyst of the right ovary, with a long pedicle, induced symptoms suggesting pregnancy. As the uterus showed no signs of such a condition, an ectopic pregnancy was assumed.

100. **History of Yellow Fever in Cuba.**—In this sketch Le-Roy traces the history of yellow fever in the island and its extirpation a few years ago. The three years of exemption are the most eloquent proof, he remarks, of the truth of the doctrine which Finlay proclaimed in the Havana Medical Society as long ago as 1881.

101. **Anakhre, Goundou.**—Ayala writes from Venezuela to describe a case of this affection in a white merchant, 39 years old, a resident of Caracas, previously healthy. A large lump has developed on each side of his nose. The lumps are never painful and cause no disturbances except the mechanical ones.

103. **Filarian Hemoptysis.**—Mon and Carballo describe the case of a man of 33 who presented nocturnal hemoptysis on twelve occasions, and a single embryo of the *Filaria Bancrofti* was discovered in the specimen of his blood. Under treatment with tincture of iodin, the hemorrhages promptly ceased, and after slight fever for two days he rapidly recovered and has been in perfect health since, with no signs of cough, fever or hemoptysis.

Siglo Medico, Madrid.

Last indexed XLIV, page 1892.

107 (LII, No. 2,674-6.) La pustula maligna. Su tratamiento por el acido fenico. C. Clemente.
108 *Auditory Affections in Schoolchildren.—Las enfermedades del oido, etc. C. Compaired.
109 (No. 2,677.) *Dificultades para el diagnostico del embarazo en las solteras (of pregnancy in the unmarried). M. Sanchez.
110 (No. 2,679.) La tuberculosis en los pueblos (in villages). J. G. Castro.

108. **Defective Hearing in School Children.**—Compaired urges that the hearing capacity of every child should be examined when it enters school and again at stated periods. Teachers should be informed when a child is defective in this respect, and should be instructed to favor it as far as possible. Parents should be educated to detect the early symptoms, and the children should be treated in special otologic clinics, separate from the ordinary hospital or other ear clinics. The teachers might test the hearing of the children if a simple card of instructions were given them, and by this means incipient disturbances might be detected in time for treatment to be effectual. In his own experience, out of 1,366 cases of deafness between the ages of 10 and 16, 16.55 per cent. were due to affections of the outer ear which could easily have been cured by simple measures, and thus have saved the child's hearing. In 18.89 per cent. the deafness was due to obstructions which might readily have been removed. In 33.79 per cent. it was the result of some infectious disease, and this proportion would certainly have been less if the ear complications had received prompt treatment. He regards adenoid vegetations as one of the most frequent causes of deafness. In 320 recent cases in which adenoid vegetations were removed he found bilateral purulent otitis media in 37 and unilateral in 41, catarrh of the tube in 68, hypertrophy of the turbinates in 79, enlarged tonsils in 59, enlarged glands in the neck in 14, and nasal catarrh in 17. In his general examinations of school children he has become convinced that fully 20 per cent. suffer from some ear affection. Districts with a moist, hot climate show much the larger percentage of purulent and catarrhal affections of the nose, throat and ears.

109. **Diagnosis of Pregnancy in the Unmarried.**—Among the practical points mentioned by Sanchez is the necessity for rectal palpation in dubious cases, as vaginal is out of the question in the supposed virgin. On the pretext of a tumor, rectal palpation will usually be permitted. When not certain of the findings, the physician can postpone the examination to a later date, "as the tumor shows no signs of malignancy." He adds that when the physician is convinced in regard to the pregnancy, he should inform the mother alone, ignoring the young woman herself and the other members of the family.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE PHARMACOPEIA OF THE UNITED STATES OF AMERICA. By Authority of the United States Pharmacopeial Convention held at Washington, 1900. Eighth Decennial Revision. Revised by the Committee of Revision and published by the Board of Trustees. Official from Sept. 1, 1905. Cloth. Pp. 692. Price, $2.50. Philadelphia: P. Blakiston's Son & Co.

HAND BOOK OF ANATOMY. Complete Compend of Anatomy, including the Anatomy of the Viscera and Numerous Tables. By J. K. Young, M.D., Second Edition, revised and enlarged; 171 Engravings, with some in colors. Flexible cloth. Pp. 402. Price $1.50 net. Philadelphia: F. A. Davis & Co., 1905.